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Seventeenth Report
1959-1960
**OFFICE OF
THE STATE FORESTER**

To
Honorable J. Hugo Aronson
Governor
State of Montana



GARETH C. MOON
State Forester

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FOREST MANAGEMENT

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FOREST PROTECTION



State of Montana

OFFICE OF STATE FORESTER

GARETH C. MOON
STATE FORESTER
NORTH WING (E) JUMBO HALL
MONTANA STATE UNIVERSITY
MISSOULA, MONTANA

July 1960.

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DON M. DRUMMOND,
DEPUTY STATE FORESTER

OTHA D. ISAACS,
ASSISTANT STATE FORESTER
FISCAL

To the Citizens of Montana

You are a shareholder in a \$60 million investment—your State Forestry Department.

The Office of the State Forester is challenged with the task of seeing that your investment pays off in:

A continuing revenue to help maintain and improve public education in the State.

Revenues with which to meet the cost of capital improvements for State institutions.

Timber to meet the building needs of a growing State and nation.

A sound management program assuring a continuous supply of basic forest products necessary to the development of a prosperous Montana.

Protection to State and private lands against fire and forest pests and insects.

Through this report it is hoped that you may become better acquainted with the job that is being done for you.

Respectfully submitted,

Gareth C. Moon
Gareth C. Moon
State Forester



LET'S SUPPOSE that you are going to use part of that acre yourself. Each year you use a Christmas tree in your house, and the size that looks best beside your hearth takes about eight years to grow.

On a corner of your acre you plant one Douglas fir tree this year, next year the same, and each year for eight years you plant just one more fir tree. At the end of eight years the first tree you planted will be ready to take its place at your hearth, so you cut it and plant another in its place.

You still have eight Christmas trees growing, and every year you will have a tree just the right size as long as you plant one when you cut one. In principle this is sustained yield and is the spirit of conservation.

Incidentally, Montana leads the nation in Christmas tree production and about 200,000 came from State land in 1959. This put almost \$25,000 into the School Permanent Fund.

YOU HAVE an acre of forest land! As a resident of the State of Montana you are a shareholder in the land administered by the Office of the State Forester. Your acre is probably located in the heavy timber country of the western part of the state.

Little matter, even though you may live in the farthest corner of the state, what happens to that acre of timber directly affects you.

The State Forester is charged with the responsibility of keeping your acre productive so that the income from it will secure to you and your community the benefits of good education. The job must be done today in order to assure an income for the future.

The program of growing trees, protecting them, harvesting them at the right time for the best return to you, and then restocking to insure a continuous crop is called **forest management**, the reason for the Office of the State Forester.



ON THE REST of your acre you find a good growth of timber. There are 34 species of trees that grow in Montana but only about a quarter of them are valuable for sawtimber. Perhaps you are fortunate enough to have a stand of Ponderosa pine, the State tree, with others mixed in—Douglas fir, lodgepole pine, white pine, and the like.

It could be that many of these trees are old, too old to be good sawtimber. They have stood and have shaded the forest beneath them so that nothing else could grow. Eventually they die a natural death. They have been wasted, and worse, nothing else could grow because of them. Now they are great snags, tall scars that create a hazard in the woods, a real fire danger. They are not even pleasant to the sight.

Under proper management this didn't happen to your acre. These great trees were harvested when at their peak in value to you. Many trees were able to flourish and now provide a new and even better stand of healthy timber. New seedlings were planted as needed assuring you a continuous growth. In 1959 over 35 million board feet of timber were harvested from State land, swelling the School Fund by \$370,000.



ANOTHER area of timber management is the selection of sites for roads, cabins, power lines, and for use as recreation spots. This special use opens up those choice sites on lakes and rivers for the building of cabins. Roads must be had to make timber available, and are an important consideration in fire protection.

Special use permits are granted with an eye to the future development of timber in the area. This use accrued to education a substantial \$20,000 in 1959 alone.



THOUGH today your acre is green and productive, tomorrow it could lay a blackened waste. While great progress has been made in preventing and controlling forest fire, it still remains potentially the greatest enemy of the forest. Protecting your acre is one of the biggest jobs of the State Forester. In cooperation with Federal and private interests the State carries on the prevention programs of SMOKEY THE BEAR and KEEP MONTANA GREEN, designed to inform the public of their responsibility in preventing forest fires. In 1959, 255 fires burned over 11,000 acres of valuable timber on State and private land. Well over half of these were caused by man's carelessness. Fire suppression is a costly operation requiring specialized training and equipment.

In addition to the land actually in the State forests, the State Forester is responsible for fire protection on about 5,000,000 acres of private forest land. To handle this gigantic job contracts are entered into with federal and private agencies who do the fire fighting with the aid and technical assistance of the Office of the State Forester.

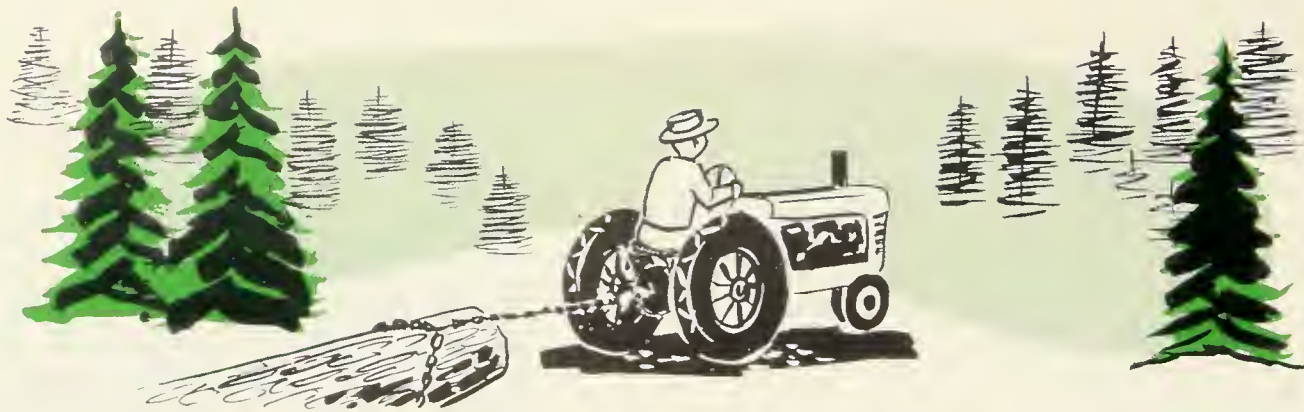
THERE IS another, more insidious enemy to your acre. Insects and disease. In combination these two destroy more sawtimber annually than forest fires do. Yet they follow forest fires and attack those trees that are damaged first.

The best place to fight these enemies of your acre is before they get to the valuable sawtimber. Often this means considerable expense combating these agents of destruction in comparatively low value timber. The long range view is necessary here. If insects attack the tree in your backyard it is far more economical to spend a little to stem the tide there than it is to wait until it spreads to your acre where damage results in a great loss in valuable timber.

The contribution made by farmers and ranchers in the first line defense against bugs and disease is a contribution far greater than the actual money spent in preserving the promise of future timber crops.

The State Forester's concern with the dilemma of forest pests has been in meeting their challenge on State land and securing the cooperation of private landowners in the continuing battle.



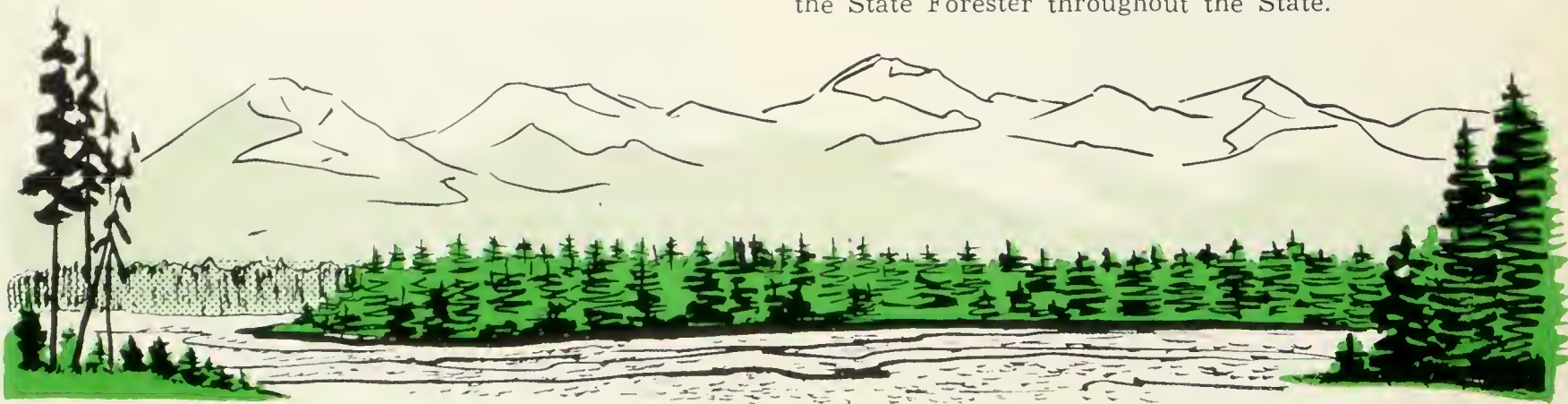


IN ADDITION to managing the State's forest land, the Office of the State Forester administers two programs that are designed to aid the private landowners in adopting sound forestry practices on his land.

The first of these is the Cooperative Forest Management Program which furnishes the small owner technical assistance on all phases of forest management which will lead to the increase in production of forest products on the land available.

The second is the Agricultural Conservation Program which provides the incentive to adopt the forest practices needed to bring his small forest holdings into better production. In either case the approach is the same, to ascertain the problems of the land holder, render technical assistance in the solving of these problems, and encourage the use of proven techniques in order that timber may become a profitable crop.

In 1959 alone 490 requests from farmers and ranchers were processed by the District Service Foresters of the Office of the State Forester throughout the State.



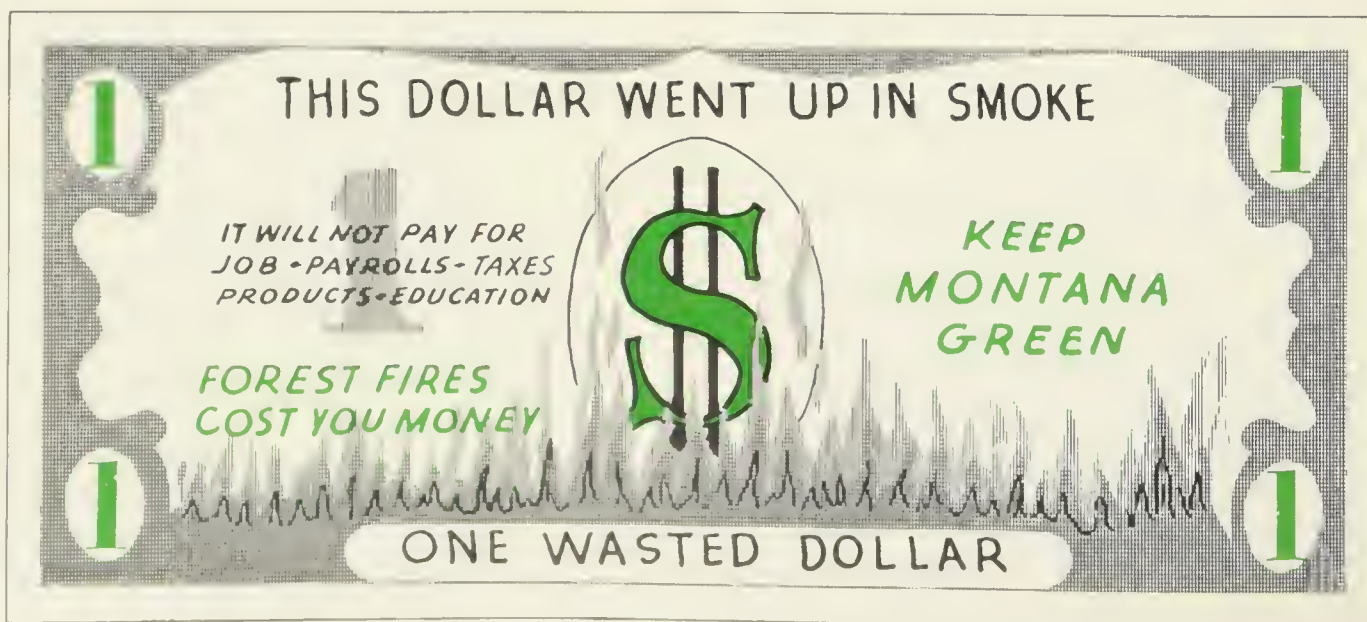
IN THE Land of the Shining Mountains timber is a treasure, with the timber industry the third largest in the State. Montana has about 3 percent of the standing sawtimber in the nation, and over 22 million acres of the land is in forests.

While many agencies are involved in keeping these acres green and productive, the Montana Forest Department's responsibilities are steadily increasing. Other State organizations play an important part in the program as well. The Montana State University's School of Forestry trains men and women to answer the rising need for foresters, while research and experimentation on forest problems are carried on by the State Forest and Conservation Experiment Station. A State Nursery is maintained to provide seedlings for reforestation, many other state agencies take part as well.

The forest picture in Montana is a big one. It is a picture including scenic beauty, industry, seedlings and mature forest giants. It is a picture of people and payrolls, of education and institutions.

The role of the Office of the State Forester is an important one to all the people of the State. Income from State lands alone makes up about a quarter of the School Permanent Fund. This and many more benefits make imperative a continuing sound management program of the State's forests.

These are your forests. Use them! Enjoy them! Protect them!



Seventeenth Report

1959-1960

OFFICE OF THE STATE FORESTER

To

Honorable J. Hugo Aronson

Governor

State of Montana



GARETH C. MOON

State Forester

MCKEE  PRINT.

Letter of Transmittal

September 1, 1960
E. Wing Jumbo Hall
Montana State University
Missoula, Montana

Honorable J. Hugo Aronson
Governor, State of Montana
Helena, Montana

Dear Governor Aronson:

In accordance with the statutes of the State of Montana, there is transmitted herewith to you the Report of the Office of State Forester covering the fiscal years ending June 30, 1959, and June 30, 1960.

Respectfully submitted,
GARETH C. MOON,
State Forester

TABLE OF CONTENTS

	Page
Letter of Transmittal.....	2
Members of the Board of Land Commissioners.....	4
Members of the Board of Forestry.....	4
Members of the Montana Rural Fire Fighters Service Executive Committee	5
In Recognition	7
Organization Chart, Office of the State Forester.....	8
Responsibility Chart, Office of the State Forester.....	9
Roster of Annual Employees.....	10
Office of the State Forester, General Information.....	11
State Forester's Office	14

FOREST MANAGEMENT PROGRAMS

Forest Management Programs.....	20
Scaling.....	22
Special Uses of State Forest Lands.....	23
Cooperative Forest Management.....	24
State Forest Inventory.....	27
Private Forest Land Reclassification.....	28
Consolidation of State Forest Lands.....	29

FOREST PROTECTION PROGRAMS

Civil Defense Fire Planning.....	34
Fire Prevention Program.....	34
Fire Protection on State Forest Lands.....	35
Fire Protection on Private Forest Lands.....	38
Hazard Reduction, State Owned Lands.....	41
Hazard Reduction, Privately Owned Lands.....	42
Montana Rural Fire Fighters Service.....	43
Forest Pest Control.....	44

INDEX TO TABLES

Statement of Appropriations and Expenditures of the State Board of Forestry.....	15
Statement of Appropriations and Expenditures of the Office of the State Forester.....	16
State Forester's Cooperative Work Funds.....	17
Christmas Trees Cut by Counties.....	29
Distribution of Income from State Forest Land.....	30
Sawtimber Cut From State Forest Land.....	31
State Forest Fire Protection Organization Needs.....	39
Area Protected, Number of Fires, Area Burned.....	40

Members of The Board of Land Commissioners

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HARRIET MILLER.....	Supt. of Public Instruction
FORREST H. ANDERSON.....	Attorney General
FRANK MURRAY.....	Secretary of State
LOU E. BRETZKE.....	Secretary and Commissioner of State Lands and Investments

Members of The State Board of Forestry

GOVERNOR J. HUGO ARONSON.....	Chairman, Helena
D. P. FABRICK.....	Chouteau
CHARLES L. TEBBE.....	Missoula
GEORGE NEFF.....	Bonner
MARK SCHOKNECHT	Libby
SYLVAN J. PAULY.....	Deer Lodge
ROSS WILLIAMS.....	Missoula
HOLLIS YOUNG.....	Creston

Montana Rural Fire Fighters Service

Executive Committee

1958

NICHOLAS WELTER, Chairman.....	Director, Montana Extension Service
ROBERT RASMAUSSON, Vice Chairman.....	Extension Service
CARTER RUBOTTOM Secretary.....	Coordinator MRFFS
GARETH C. MOON.....	State Forester
EMIL JUNTUNEN.....	U. S. Forest Service
WILLIAM HAYES.....	Montana Fire Rating Bureau
EDWARD WARWICK.....	Rural Fire Chief
ROBERT SHEMER.....	U. S. Bureau of Land Management
PAUL WORKING.....	Real Estate and Insurance
GEORGE NEFF.....	Anaconda Company
FRED TUBB.....	Farm Bureau

1959

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CARTER RUBOTTOM, Secretary.....	Coordinator MRFFS
GARETH C. MOON.....	State Forester
GEORGE NEFF.....	Anaconda Company
JOHN PASHA.....	Farm Bureau
JOHN F. HORN.....	J. Niels Lumber Company
EMIL JUNTUNEN.....	U. S. Forest Service
WALLIS CHAPIN.....	U. S. Bureau of Land Management
WILLIAM HAYES.....	Montana Fire Rating Bureau

In Recognition . . .



OTHA ISAACS

Assistant State Forester, Fiscal

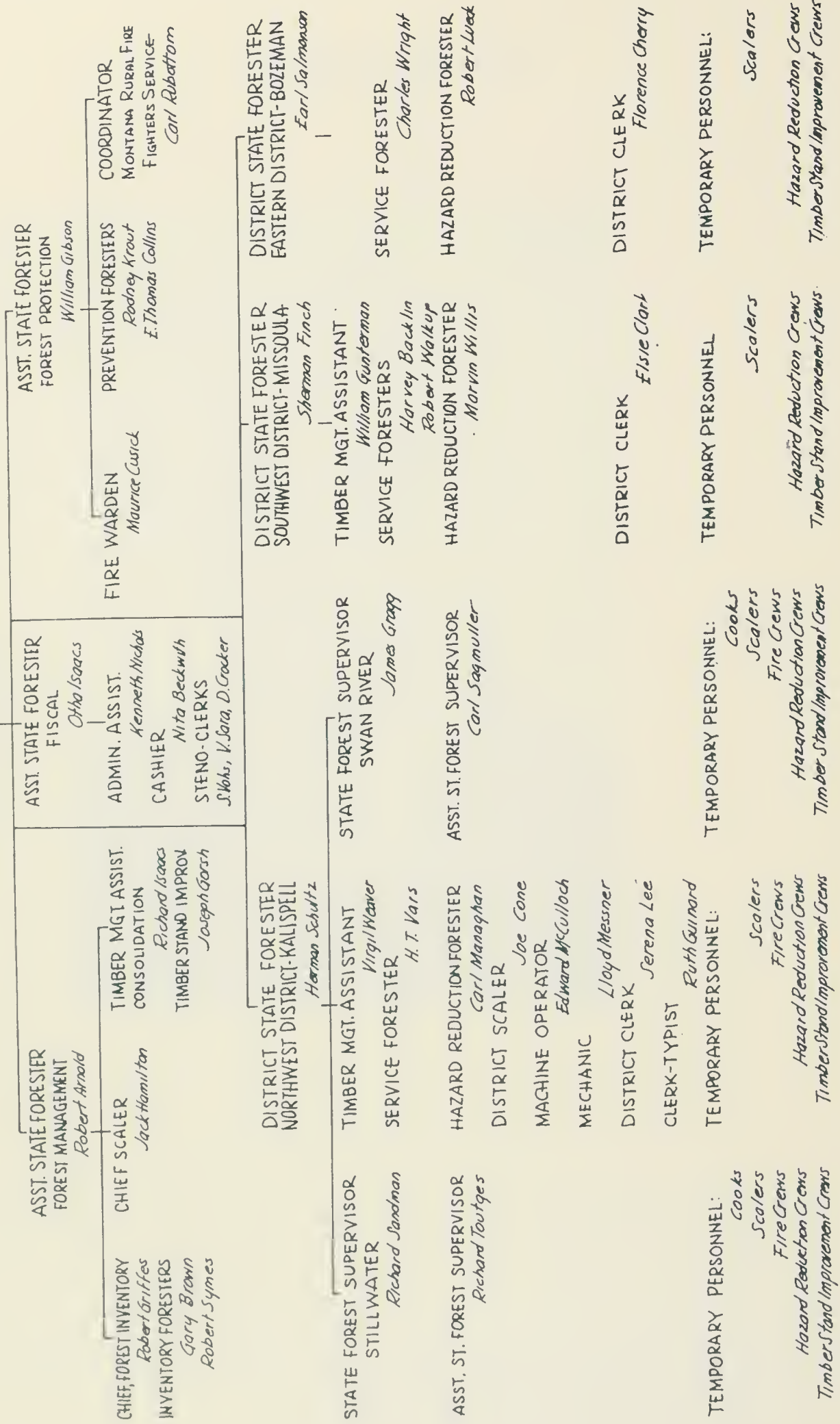
On September 10, 1933, Otha Isaacs of Kalispell was asked to do a log scaling job of two or three weeks' duration for the Montana State Forestry Department. Although Otha completed this assignment on schedule, we find him, twenty-seven years later, still with the Department and looking forward to retiring in 1962. Otha still believes, as he did back in 1933, that "a job is a job, so let's get on with it."

Otha Isaacs is one of the members of the State Forestry Department who gives an aura of continuity in which the rest of us can work. We are glad to have him with us. 1962 will roll around for the rest of us even more quickly than it will for Otha.

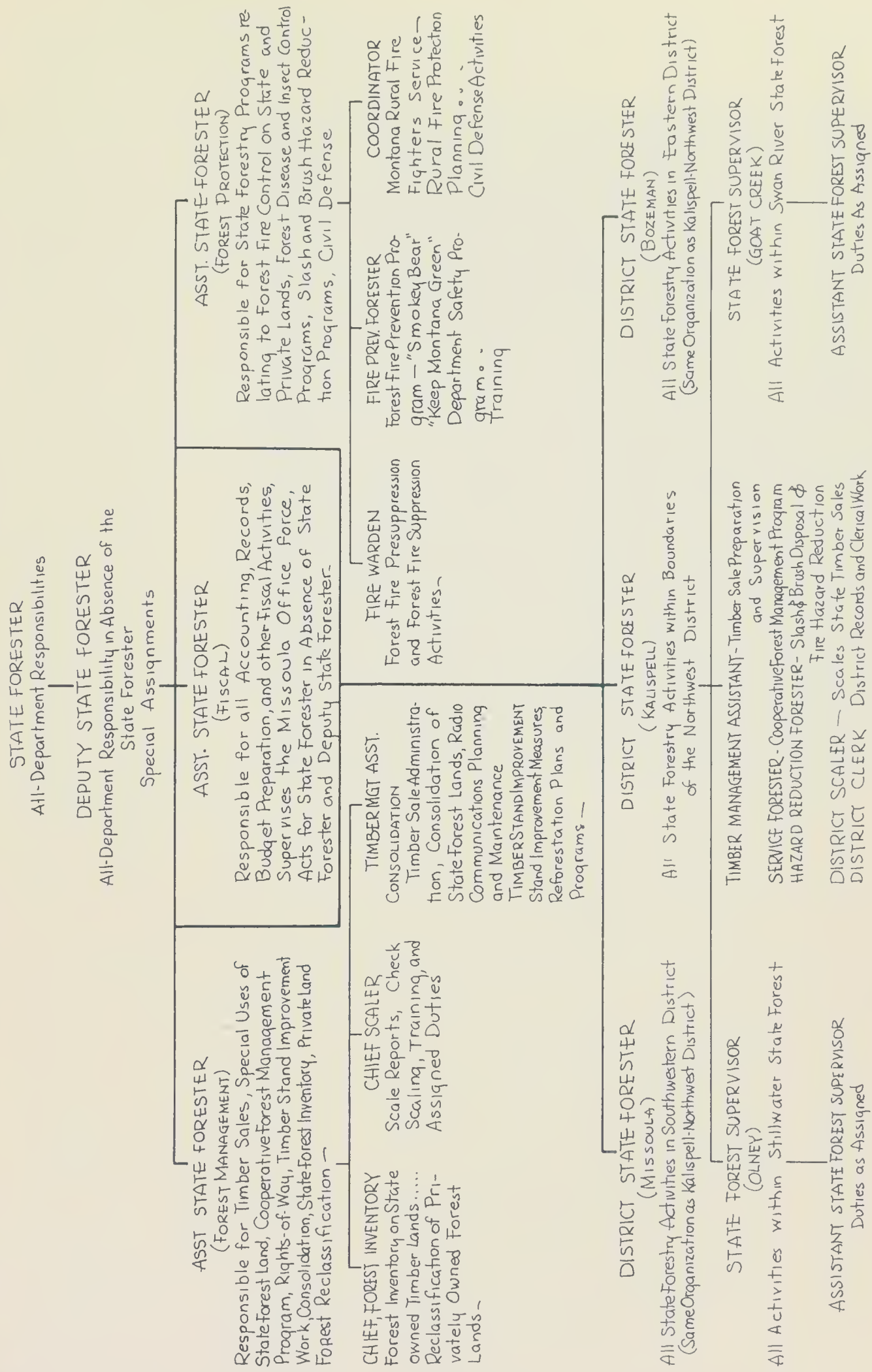
Aug. 15 '60

Gareth C. Moon

Dan M Drummond



RESPONSIBILITY CHART - OFFICE OF MONTANA STATE FORESTER



Roster of Employees

Gareth C. Moon, State Forester

Don M. Drummond, Deputy State Forester

Otha O. Isaacs, Assistant State Forester, Fiscal

Kenneth Nichols, Administrative Assistant

Nita Beckwith, Cashier

Delores Crocker, Clerk-Stenographer

Vivian Sara, Clerk-Stenographer

William K. Gibson, Assistant State Forester, Protection

Rodney O. Krout, Fire Prevention Forester

E. Thomas Collins, Fire Prevention Forester

Maurice Cusick, State Firewarden

Carter Rubottom, Coordinator MRFFS

Shirley Vohs, Clerk-Stenographer

Robert Arnold, Assistant State Forester, Timber Management

Jack Hamilton, Chief Scaler

Richard Isaacs, Consolidation Forester

Robert Griffes, Chief Inventory Forester

Robert Symes, Inventory Forester

Gary Brown, Inventory Forester

Paula Szakash, Clerk-Stenographer

Sherman Finch, District State Forester, Southwest District

William Gunterman, Timber Management Assistant

Robert Walkup, Service Forester

Harvey Backlin, Service Forester

Marvin Willis, Hazard Reduction Forester

Elsie Clark, Clerk-Stenographer

Herman Schultz, District State Forester, Northwest District

Virgil Weaver, Timber Management Assistant

Harry T. Vars, Service Forester

Carl Managhan, Hazard Reduction Forester

Lloyd Messner, Mechanic

Edgar McMullough, Equipment Operator

Serena Lee, Clerk-Stenographer

Earl Salmonson, District State Forester, Eastern District

Charles Wright, Service Forester

Robert Lueck, Hazard Reduction Forester

Florence Cherry, Clerk-Stenographer

Richard Sandman, State Forest Supervisor, Stillwater State Forest

Carl Sagmuller, Assistant Forest Supervisor

Francis Shenefelt, Hazard Reduction Foreman

Olive Shenefelt, Cook

James Gragg, State Forest Supervisor, Swan River State Forest

Richard Toutges, Assistant Forest Supervisor

Carl Toyce, Hazard Reduction Foreman

Betty Toyce, Cook

Floyd Holman, Fire Warden, Big Fork Unit

Joe Gorsh, Timber Stand Improvement, temporarily in armed service

GENERAL INFORMATION

Office of State Forester

Under the Enabling Act approved by Congress on February 22, 1889, Sections 16 and 36 in every township within the State was granted to the State of Montana for common school support. If any of these sections had been disposed prior to the enactment of this legislation, lieu sections were granted to the state. The State Legislature set up the facilities for the management of these lands.

The Constitution of the State of Montana provides that the direct control of all lands granted to the State for the support of the various educational institutions will be under the direction of the State Board of Land Commissioners which is comprised of the Governor, Superintendent of Public Instruction, Secretary of State, and the Attorney General. Because of the volume of business and the technical nature of the work, the Legislature saw fit to establish the Office of the State Forester, just 51 years ago in 1909.

The State Forester is the Chief Administrative and executive officer, under the State Board of Land Commissioners, in all matters pertaining to the State Forests. He is appointed by the Governor and confirmed by the State Senate. The State Forester is authorized by law to appoint such help as district foresters, fire wardens, scalers and other trained and qualified assistants as may be necessary in the administration of the State Forests and the forest lands within the State. The State Forester does all the field work in the selection, location, examination, appraisal and reappraisal of the state timber lands. It is the duty of the State Forester to supervise all state timber sales. He is in charge of all fire wardens of the State and he must direct and aid them in their duties. In general, the State Forester, under the supervision of the Land Board, executes all matters pertaining to forestry within the jurisdiction of the State.



Located in the heart of the Swan River State forest this headquarter site provides for economical year around management and efficient fire control.

In accordance with the provisions of the Enabling Act, necessary laws have been enacted by the State Legislature to guide the administration of the Land Department and the Office of State Forester. Provisions have been made for the annual distribution of income received from the rental and operation of the grant lands. The net rental income from the Public School grant lands, such as grazing, together with the interest earned on investments, after statutory deduction, is distributed annually to the counties of the State on the basis of the number of children of school age. Income from other grant lands is made available to the institutions to assist in defraying operational expenses. All monies received from the sale of lands, timber, and minerals, is credited to a permanent fund for each of the land grant institutions. These permanent funds are held forever inviolate as the property of the fund.

The monies are invested in United States Government Bonds, Bonds of the State of Montana, counties, cities and school districts within the state, and the interest received on these investments is distributed annually with the other income to the proper land grant institutions. The Capital Building Grant is predominately forest land. All money received from the sale of this land, interest, grazing rentals, agriculture, sale of timber, and oil royalties, are disbursed as received for improvements and new construction of capitol buildings.

All state owned lands, or those which may hereafter be acquired by the State, which are principally valued for the timber on them, for the growing of the timber, for watershed protection, are under statute classified and designated as "State Forests" and reserved for forest production and watershed protection. The following state forest units have been established primarily to secure, through forestry management, a continuous supply of timber and a permanance of watershed cover:

1. Stillwater State Forest, approximately 90,000 acres in the watershed of the Stillwater and Whitefish Rivers in Flathead and Lincoln Counties.
2. Swan River State Forest, approximately 38,000 acres in the Swan River watershed of Lake County.
3. Coal Creek State Forest, approximately 20,000 acres in the Coal Creek watershed of the North Fork of the Flathead River, Flathead County.
4. The Sula State Forest, approximately 10,000 acres in the watershed of Camp and Cameron Creek of Ross Hole in Ravalli County.
5. Thompson River State Forest, approximately 15,000 acres in the Thompson River watershed of Sanders County.
6. Clearwater State Forest, approximately 18,000 acres in the Clearwater River watershed of Missoula County.
7. The Lincoln State Forest, approximately 8,000 acres in the Blackfoot River watershed in Lewis and Clark County.

Lands classified as timber lands are not subject to sale although the timber may be sold and disposed of in accordance with law. Although the State Forester, with approval of the State Board of Land Commissioners, sells timber at such a price per thousand feet as in his judgment shall be for the best interest of the State, no timber shall be sold at a price of less than three (\$3.00) dollars per thousand feet for White and Yellow Pine and Spruce, or \$1.50 per thousand feet for all other species. Timber is sold and cut under rules and regulations prescribed by the State Board of Land Commissioners for the preservation of standing timber and prevention of fires. In order to enable Montana's forest lands to continue the production of wealth in the form of growing crops of forest products, abundant usable water, and matchless outdoor recreation areas, the Office of State Forester has begun, and is continuing, a forestry program of long range policies based on factual and scientific information.

In 1939 the State Legislature created the Montana State Board of Forestry in its present form for the purpose of protection and conservation of forestry resources, forest range and water, prevention of forest fires and soil erosion and for more adequately promoting and facilitating the cooperation between the State of Montana and all of the public and private agencies associated in such work in the state. The responsibilities of the State Board of Forestry lie largely with the forest activities on privately owned forest lands. The Boards consists of the Governor, as ex-officio chairman, and seven additional members who are appointed by the Governor. These members are appointed to represent:

Water Conservation Board

Forest Protection Associations

Stock and Wool Growers Associations

Lumber Manufacturers Association

The Grange, The Farm Bureau and Farmers Union

Farmers Union

Montana School of Forestry

U. S. Forest Service

The State Forester serves as Secretary to this Board.

The State Board of Forestry is authorized and empowered to classify the forest areas of the State as forest lands for which conservation and fire protection measures are required; to create fire districts; to provide for the protection of forest lands by the State Forester or by any other feasible means; to make and enforce reasonable rules and regulations for the purpose of enforcing and accomplishing their objectives; to cooperate with the State and Federal agencies; to give technical and practical advice to the farmers concerning water and forest conservation and in the establishment and maintenance of woodlots, windbreaks and shelterbelts; to assist the State Board of Land Commissioners in the protection, economical development and use of the State forests.

The State Board of Forestry is required by law to hold two regular meetings each year at times and places designated by it. During the past biennium, in addition to the regular duties of the board, such as approving fire assessment lists, the board studied and approved various zones of forest pest insect infestation, established fire protection districts, and prepared to be the host to the National Association of State Foresters. The Board further studied in detail the forest pest legislation which failed to pass the 35th Legislative Assembly. Continued studies to develop acceptable legislation are being made. The Board took action to recover outstanding debts owed by private landowners for spruce budworm spraying for 1957. The Board reviewed and put into effect a hazard reduction manual prepared by the State Forester in order to establish the policy and procedures under which the new hazard reduction law would be carried out by the State Forestry field forces. The Board further recommended that the use and sale of fireworks be prohibited in Montana.

Four major forestry problems have faced the State of Montana for sometime. They are:

1. The control of forest insects and diseases.
2. Statewide forest fire protection.

3. Reduction and management of fire hazards incurred during logging and clearing operations.
4. The need for forest industries designed to utilize waste products and small diameter species as well as the production of end forest products within the State.

The control of insects and diseases is still a major problem, particularly in regard to the spruce budworm. Attempts to secure adequate legislation to improve this situation have failed in the past. The magnitude of the loss caused by insects and diseases is such that continued efforts must be made to secure adequate legislation.

Statewide forest fire protection has taken a great stride forward with the passage of amendments to the fire law during the 36th Legislative Session. Although the scope of this particular problem and the actual accomplishing of statewide forest fire protection is in itself a tremendous undertaking, the State Forester is confident that this goal will be realized in the near future.

The situation facing the State in the reduction and management of fire hazards is considerably better since the 36th legislative assembly approved the new hazard reduction law and the Board of Forestry approved the manual for policy and operational procedures in carrying out the provisions of the law. Hazards created before the enactment of this law will remain a problem for a few more years.

Considerable volumes of small diameter species such as lodgepole pine, remain untapped in Montana. The need for forest industries designed to harvest and utilize this timber is obvious. Much of the timber produced in this State goes elsewhere for remanufacture. Considerable effort should be expended in keeping this manufacture within the State of Montana, thus providing payrolls and job opportunities of a year-around nature. Efforts of the Montana Forest and Range Experiment Station and the Montana Forestry School in this direction should be encouraged.

STATE FORESTER'S OFFICE

Location

The central office of the State Forester was moved in April, 1958, from the Forestry School Building to the North Wing of Jumbo Hall, a temporary frame structure on the campus of Montana State University. This move provided a change from two rooms to sufficient space for the headquarters of the divisions of Forest Protection, Management, Inventory and the office of the Missoula District Forester and staff as well as the central office clerical force.

The office of the northwest district is located at Kalispell and houses the District Forester and his staff as well as being headquarters for forest fire control for the Swan River State Forest, Stillwater State Forest, and the Bigfork fire protection unit. Headquarters for the Stillwater State Forest are located near Olney, and for the Swan River State Forest, at Goat Creek, 13 miles south of Swan Lake. Headquarters for the eastern district are located at Bozeman.

Office Force

The State Forester's clerical staff consists of an Administrative Assistant, Cashier, and a Clerk-Stenographer. Each division (Forest Protection, Management and Administration) has a Clerk-Stenographer to handle the clerical duties.

Organization

The Office of State Forester has been re-organized to group various functions into divisions so that the work of a division is the responsibility of one individual. The functions are:

1. OPERATION, headed by an Assistant State Forester whose responsibilities include fiscal procedures and records, personnel management, and general field and office management.
2. FOREST PROTECTION, headed by an Assistant State Forester whose responsibilities include protection of the forests against forest fire, forest insects, and disease, as well as hazard reduction and civil defense.



Thriving under sound management and protection programs, the State forests combine utility and beauty.

3. FOREST MANAGEMENT, headed by an Assistant State Forester whose responsibilities include timber sales, special use, cooperative forest management, rights-of-way, timber stand improvement, consolidation and forest inventory.

The Deputy State Forester has the responsibility of assisting the State Forester in planning, organizing, directing, revising, and coordinating the activities of the department and acting in the place of the State Forester in his absence.

In order to more efficiently carry out the forestry work, the State has been divided into three districts with a District State Forester in charge of each district, who is responsible for all forestry activities within his district. As need dictates he is staffed with a Timber Management Assistant, serving our farm forests, Hazard Reduction Foresters, Scalpers, Clerks, and other personnel. Headquarters for the districts are located in Missoula, Kalispell, and Bozeman.

As of June 30, 1960, the Office of State Forester consisted of forty-two (42) permanent employees, thirty-five (35) men and seven (7) women. Of the men, twenty (20) have degrees in forest management from a regular school of forestry. In addition, seasonal employees are hired as needed to combat fire, for hazard reduction, timber stand improvement, and other related jobs.

Accomplishments

Consolidating the numerous activities of the Office of State Forester in one headquarters building in Missoula with sufficient room has resulted in more efficient and economical administration. An intercom system has been established for the headquarters. Teletype has proved more effective and cheaper in bringing the districts closer to the Missoula office, particularly in fire control activities.

A system of monthly staff meetings supplemented by monthly reports of division chiefs and District State Foresters has improved interdepartmental communication. The preparation of manuals for all phases of the program has brought about increased efficiency in the field.

Problems

A most difficult problem is the processing of requisitions and claims. This is because ap-

propriated funds are separate and are not consolidated into one disbursement fund. If a single fund were maintained, budget requests could be made in the usual manner through proper accounting, and disbursement through one fund would result in saving of time, supplies, labor, and consequently, tax dollars.

The present office of the State Forester is a temporary war-time structure located on the University Campus. The building is poorly constructed and inadequately heated, ventilated, and wired. Temperatures under 50 are common throughout the winter months and approach 100 degrees during the summer. Insufficient wiring prohibits the full use of the office machines. The President of the University has notified the State Forester that the building is to be destroyed in 1961.

Recommendations

1. To consolidate all appropriated monies into one disbursement fund.
2. Minimize personnel turnover and training through maintaining the pay scale for professional foresters and clerical help to that of federal and private agencies engaged in similar operations.
3. Replace the present inadequate administration office with a more permanent modern structure.

OFFICE OF STATE FORESTER STATEMENT OF APPROPRIATIONS AND EXPENDITURES STATE BOARD OF FORESTRY

	Balance Forward	Appropriation	Disbursed	Forward	Revert to Gen. Fund
Fiscal Year 1959, July 1, 1958-June 30, 1959					
Salaries	\$.....	\$1,080.00	\$1,080.00	\$.....	\$.....
Maintenance and Operation.....	115.30	395.00	509.76	.....	.54
Social Security .....	.....	25.00	25.00	.....	.....
Fiscal Year 1960, July 1, 1959-June 30, 1960					
Salaries .....	.....	1,100.00	1,100.00	.....	.....
Maintenance and Operation.....	.....	335.00	308.35	26.65	.....
P. E. R. S. and Social Security.....	.....	65.00	65.00	.....	.....

OFFICE OF STATE FORESTER
STATEMENT OF APPROPRIATIONS AND EXPENDITURES

	Balance Forward	Appropriation	Disbursed	Forward	Revert to Gen. Fund
Fiscal Year 1959—July 1, 1958-June 30, 1959					
Administration					
Salaries	\$.....	\$58,380.00	\$58,380.00	\$.....	\$.....
Maintenance and Operation.....	312.36	25,000.00	25,310.50	.....	1.86
Capital Outlay	1,900.00	2,000.00	3,898.01	.....	1.99
Repairs and Replacements.....	42.86	200.00	242.36	.....	.....
PERS .....	.....	4,965.00	4,965.00	.....	.....
Social Security .....	.....	1,500.00	1,500.00	.....	.....
Protection of Lands					
Salaries .....	.....	15,110.00	15,110.00	.....	.....
Maintenance and Operations	1,710.45	33,705.00	35,415.41	.....	.04
Social Security .....	.....	400.00	400.00	.....	.....
Insect Control	70,889.00	.....	4,870.34	.....	66,018.63
Capital Outlay .....	.....	2,810.00	2,798.57	11.43	.....
Repairs and Maintenance	40.29	2,450.00	2,490.29	.....	.....
Inventory of Forest Resources .....	.....	9,000.00	9,000.00	.....	.....
Timber Management					
Salaries .....	.....	43,780.00	43,780.00	.....	.....
Maintenance and Operation.....	17.13	3,700.00	3,716.52	.....	.61
Social Security .....	.....	.....	.....	.....	.....
Capital Outlay*	810.54	1,000.00	1,936.27	.....	17.70
*\$143.43 transferred into this fund					
Fiscal Year 1960—July 1, 1959-June 30, 1960					
Administration					
Salaries .....	.....	67,460.00	67,460.00	.....	.....
Operation .....	.....	25,000.00	23,953.10	1,046.90	.....
Capital Outlay .....	.....	2,000.00	2,000.00	.....	.....
Repairs and Replacements.....	.....	600.00	459.71	140.29	.....
PERS and Social Security...	.....	7,000.00	7,000.00	.....	.....
Protection of Lands					
Salaries .....	.....	26,000.00	26,000.00	.....	.....
Operation .....	.....	32,000.00	31,949.79	50.21	.....
Social Security .....	.....	485.00	485.00	.....	.....
Capital Outlay .....	.....	2,000.00	1,620.42	379.58	.....
Repairs and Replacements .....	.....	1,500.00	1,406.24	93.76	.....
Insect Control .....	.....	2,000.00	202.14	1,797.86	.....
(Inventory of Forest Resources .....	.....	12,000.00)	.....)	.....)	.....
(Supplemented by Counties .....	.....	36,806.07)	.....)	.....)	.....
		48,806.07)	46,719.24)	2,086.83)	.....
Timber Management					
Salaries .....	.....	48,280.00	46,646.85	1,633.15	.....
Operation .....	.....	2,075.00	2,015.04	59.96	.....
Social Security .....	.....	1,100.00	1,100.00	.....	.....
Capital Outlay .....	.....	3,000.00	.....	3,000.00	.....
Swan River Residence .....	.....	12,000.00	871.60	11,128.40	.....

STATE FORESTER'S COOPERATIVE WORK FUNDS

All monies received from public and private agencies and individuals cooperating with the State Forester and the State Board of Forestry are deposited to the credit of these special work

funds in compliance with Section 81-1410 R. C. M., 1947 (1830-L) (L. 1925) and are used for purposes set forth in Section 28-123 R. C. M., 1947 (Sec. 23, Ch. 128, L. 1939).

Protection Assessments Funds—155

Fiscal Year	Forward	Receipts	Total Available	Expended	Balance Forward
1959.....	\$ 2,822.30	\$ 55,085.42	\$ 57,907.72	\$ 2,968.45	\$ 54,939.27
1960.....	54,939.27	64,797.62	119,736.89	114,546.53	5,190.36

Clarke-McNary Fund—104-19

1959.....	\$ 5,689.42	\$116,934.38	\$122,623.80	\$116,815.01	\$ 5,808.79
1960.....	5,808.79	116,625.94	122,434.73	116,513.61	5,921.12

Cooperative Forest Management—104-41

1959.....	\$ 11,118.82	\$ 18,540.78	\$ 28,659.60	\$ 26,815.47	\$ 1,844.13
1960.....	1,844.13	18,586.30	20,430.43	15,841.92	4,588.51

Soil Bank—104-62

1959.....	\$ 955.84	\$ 1,300.00	\$ 2,255.84	\$ 2,255.84	\$.....
1960.....	.....	491.00	491.00	.....	491.00

Timber Stand Improvement—100

1959.....	\$ 30,269.13	\$ 20,965.32	\$ 3,088.00	\$.....	\$ 48,146.45
1960.....	48,146.45	21,019.42	25,243.59	.....	43,922.28

Brush Disposal—156

1959.....	\$ 24,560.16	\$ 52,398.01	\$ 76,958.17	\$ 49,162.72	\$ 27,795.45
1960.....	27,795.45	46,466.53	74,261.98	42,003.23	32,258.75

Slash Disposal—156

1959.....	\$166,464.16	\$159,115.54	\$325,579.70	\$161,905.56	\$163,674.14
1960.....	163,674.14	284,831.71	448,527.85	148,410.71	300,117.14

State's General Fund—101*

1959.....	\$ 97.00
1960.....	365.74

*To State's General Fund when deposited.

FOREST MANAGEMENT



This scientifically sound cutting method called Block Cutting is employed on some State Land. The areas cut are primarily mature and over mature timber and have no under story of desirable species. The 20 acre Blocks are clear cut and residue is piled for burning as seen above. Area is reseeded naturally after preparation.

FOREST MANAGEMENT PROGRAMS

Program

The forest management division is primarily responsible for realizing maximum revenues from the sale of forest products consistent with sound forestry and land management practices. During the biennium all divisions of the office of the State Forester concerned with forest management were brought under the supervision and direction of an Assistant State Forester. These divisions are Timber Sales, Special Uses, Timber Stand Improvement, Consolidation of State Lands, Cooperative Forest Management, Inventory of State Lands and Reclassification of Private Forest Lands.

Timber sales have been made primarily to control epidemic outbreaks of tree-killing insects and to salvage areas of blowdown timber. Management cuts in the Swan and Stillwater State Forests have also been made. The policy of cutting 20 to 25 million board feet annually has been continued pending the completion of the State forest land inventory which is estimated to be in 1964.

The cutting methods used in harvesting State timber vary according to site, species, size and age of stand, degree of stocking and incidence of disease and insects. Cutting practices also vary from light or heavy selective marking to clear cutting in twenty-acre blocks. The heavy selection practice is used on those stands which are generally mature to overmature and have an understory of younger thrifty trees. In such an area the remaining trees will provide seed to regenerate a new stand. The seed trees are removed when the young stand has become established.

Light selection cutting is done in those stands which have a small percentage of mature and overmature trees. Removal of the mature and overmature trees leaves a thrifty well stocked stand which will continue to grow and add to the nation's future wood supply.

Clear cutting is done in those stands which are primarily mature and overmature and which have no understory of younger thrifty trees of desirable species. The twenty acre blocks are clear cut of all merchantable timber, the understory and slashings are piled and burned and the soil prepared for natural seed-

ing from the surrounding timber stand. Cutting blocks are dispersed throughout the sale areas in order to develop road systems for fire protection and future timber harvest; also to prevent extensive openings which would subject the remaining stand to windthrow.

Accomplishments

During the biennium the State forest districts prepared and administered sales approximating 56.6 million board feet in 36 advertised timber sales and 93 timber permits. In addition, the districts handled 13 sales of timber on State lands classified as grazing. The volume sold during the biennium represents an overcut of 6.6 million board feet which was due to emergency sales of blowdown and beetle infested timber.

The Timber Management Manual was revised to assist the district state foresters to prepare and administer timber sales and special uses on a district basis. Billing, inspection and administration of timber sales and special uses are now being made from district headquarters in Kalispell, Missoula and Bozeman. Closer timber sale supervision is possible through State forest supervisors stationed on the Swan and Stillwater State Forests. This serves to speed up operations and improve services to lessees and purchasers of State forest products. A Timber Appraisal Handbook has also been prepared, which makes appraisals of timber uniform throughout the organization and speeds up timber sales.

A new method of estimating timber volumes was adopted this biennium which saves time and money in preparing timber sales. The method involves the use of a wedge prism which eliminates the necessity of measuring sample plot boundaries. It also involves measuring the basal area of the timber stand which is faster and more accurate than measuring by older timber methods. Department personnel prepared a manual of instructions for estimating timber by this method and is used by the State Forester as well as industry foresters.

A fulltime Timber Stand Improvement Forester was employed in June, 1959. His activities have been concerned with a productivity

study on the State forests. The procedure used in this study is similar to that used by the U. S. Forest Service in the Timber Resources Review. Information obtained in this study will give an indication of the total reforestation job to be done on State forest land and specific areas which need planting, scarifying or logging. The study has covered approximately 10,000 acres to date.

One hundred fifty eight acres of State land have been planted to 110,700 ponderosa pine seedlings during the period covered by this report in an effort to reforest denuded lands. Studies are being conducted on direct seeding which, if successful, will reforest land at a much cheaper cost than planting.

Under the timber stand improvement program, 131 acres have been scarified to provide a seedbed for natural reseeding, and approximately 25 acres of young timber thinned.

Problems

Forest industries experienced a lumber market slump in 1960, and as a result expected timber volumes were not removed from State lands. The State Forester recognizes that fluctuations in the lumber market occur and that operators may have difficulty at times completing their timber sale agreements. Four of the current contracts have been extended beyond the expiration date, and if the market slump continues, it is expected that more requests for extensions will be received. This means that State forestry personnel will be required to spend time scaling and administering old sales with less time to spend preparing new ones.

Increasing occurrence of blowdown and bug infestations require immediate action by timber management personnel. Planned timber management cutting must be delayed until these emergencies are taken care of. Preparing and administering sales of this nature is expensive and time consuming.

Vehicles assigned to timber management personnel are from 5 to 10 years old, some with mileages in excess of 100,000. Down time and high operating costs from continued use of these old vehicles curtails timber sales preparation and administration work.

The location of classified State forest lands require that timber sales be made in widely

scattered areas. Timber management personnel must spend more travel time to prepare and administer the timber sales program of 20 to 25 million board feet.

The timber management division has the responsibilities of keeping a master file of all special use leases, timber sale contracts, timber cutting records, timber sale advertising, right-of-way investigations, trespass investigations, land records, preparation of forms, and supervisory instructions to the State forest districts. Presently one stenographer is assigned half time to the timber management division which is not adequate to handle the work load.

Approximately 200 permit sales are issued by the State Forester each year for the cutting of Christmas trees. Eighteen man months are required to prepare and administer these sales plus considerable travel and clerical work. The grade of Christmas trees on State land needs to be improved to compete with trees from private land. This could be accomplished by thinning, pruning and shearing young Douglas-fir trees. Christmas tree cutting permits on an annual basis do not permit sufficient time for the purchaser or the State to realize any increased revenue from improvement work.

Under the present practice, forest roads are built by loggers who purchase State timber. As a consequence, road development is slow in areas in which timber is not being cut. Roads are needed in undeveloped areas to salvage small areas of mature, overmature, bug-infested, blowdown and fire-killed timber which presently represents a loss in revenue to the State.

Road engineering on forested lands presents many problems and is difficult. Special skills and considerable experience are necessary to locate and supervise forest road construction. The organization does not have a qualified forest road engineer.

Recommendations

1. Six vehicles assigned to the timber management division are in need of replacement due to high mileage and excessive maintenance costs. It is recommended that three vehicles be replaced in fiscal year 1962, and three vehicles in fiscal year 1963.

2. The Missoula district needs one additional forester to handle State timber sales and other management activities.
3. A forest road engineer is needed to survey and supervise road construction work.
4. It is recommended that a stenographer be assigned full time to the timber management division so that records and supervisory work can be handled adequately.
5. It is recommended that the following forest roads be constructed with appropriated funds.
 - 4 miles of Loop Road on the Swan State Forest
 - 3½ miles of Loop Road on the Stillwater State Forest
 - 3 miles of fire access and timber removal road on the Swan State Forest
 - 6 miles of fire access and timber removal road on the Stillwater State Forest

AN INCOME FROM STATE FOREST LANDS OF \$780,000.00 WAS DISTRIBUTED TO THE STATE'S SCHOOL PERMANENT FUND, INSTITUTIONS, AND THE CAPITOL BUILDING FUNDS IN THIS BIENNIUM.

SCALING

Program

Under present State laws timber from State owned lands must be scaled by State employed personnel. A chief scaler regularly inspects the work performed by scalers and determines that standards are kept up to those of other timber selling agencies and with private industry. The check scaler also has a continuing training program for scalers so that all personnel are adequately instructed with new methods and procedures.

Accomplishments

A scaling manual was adopted for department use this biennium which is published by the Idaho State Board for Vocational Education. This manual follows very closely the policies and procedures used in scaling Montana State timber and is used in lieu of publishing a Montana scaling manual which would be expensive and time consuming. The Idaho Manual is satisfactory in all respects and is being used by department scalers.

Volumes amounting to 22,833,269 board feet were scaled by State employed personnel during the biennium. Scaling is generally done at central locations on trucks rather than on the timber sale area or at the purchaser's mill. Scalers are able to handle several sales at one station by this method. Scale records are recorded in triplicate with a copy of the scale delivered to the purchaser at the time of delivery.

Problems

Timber cutting on the more accessible State lands was completed many years ago. Present sales are widely scattered and have increased in number in order to remove the 20 to 25 million board feet in planned timber sales. Present personnel is not adequate to do a satisfactory job of scaling State timber. Complaints are received from truckers at scale stations that they lose time waiting to be scaled. Modern woods operations will not permit a scaler to work safely in the woods.

Logging in Montana is generally seasonable and it is difficult to hire competent scalers at the time of year needed. Another problem is presented by small operators who do not remove sufficient volume to keep a scaler on duty full time. This means that scaling personnel must travel excessively to keep the smaller operations scaled currently. Often times several small operators may require scaling at a time when personnel is not available to do the job. In some areas loggers are required to sell logs by weight, while the State is required by law to sell timber by the board foot Decimal C Log Scale Rule. The weight ratio to Decimal C Scale Rule is often times inequitable and causes the purchaser to take a loss. The State Forestry Department is investigating other meth-

ods of scaling such as weight to scale relationships, and a cubic foot volume measurement of truck loads or decks with a conversion factor to Scribner Decimal C Log Rule.

Recommendation

It is recommended that temporary scalers be hired at seasons of heavy work load to expedite the removal of timber from State lands.

SPECIAL USES OF STATE FOREST LAND

Program

The trend for increased special use of State forest land has continued during the biennium. These special uses include grazing, home and cabinsites, shooting ranges, fishing farms, and religious retreats, etc. In the past some special use leases were made in locations which were not planned, and in some cases unsuitable for which they were leased. Due to the increased demand for recreational home and cabinsite leases, the State Forester has initiated a planned program for area development.

Accomplishments

Several such developments have been planned and leased during the biennium. Twenty five lots were located and leased on Elbow Lake near Greenough, Montana. Income from this development in fiscal year 1960 was \$725.00. Nine more cabinsites were surveyed and leased on Landers Fork of the Blackfoot River near Lincoln. Income from this development was \$190.00 as compared to \$34.02 for grazing on the remaining 630 acres of the section. Another area on Seeley Lake is in advanced state of development. This area will have 30 summer homesites, roads and a large public access area. The cabinsites are located back from the lake-shore leaving all available shoreline for community and public access. Expected income from this development is \$1,050.00 annually. Several desirable summer home recreational areas remain undeveloped pending time and funds for development work, access road construction, or acquisition of right-of-way across adjacent private lands. On November 25, 1959, the State Board of Land Commissioners approved an increase in rental rates and lease classification as recommended by the State Forester. Leases were designated as Class 1, 2 or 3, depending upon their location and use. Class 1 lots with an annual rental of \$50.00 are located on main lakes or state and federal highways. Class 2 lots with an annual rental rate of

\$35.00 are those located on minor lakes, rivers, lake outlets, county roads, or adjacent to or behind Class 1 lots. Class 3 lots with an annual rental rate of \$25.00 are those adjacent to or behind Class 2 lots.

As required by State law, 27,730 acres of forest grazing land have been surveyed this biennium to determine the carrying capacity. A total of 68,645 acres have been surveyed and inspected. A method is being developed whereby aerial photos can be used to determine areas useable by livestock. Photos obtained for use in the inventory of State lands are examined to determine areas useable by livestock. These areas are then examined on the ground, sample plots taken and the carrying capacity determined for each section. This method will speed up the grazing survey on State forest lands and is more economical.

New cooperative agreements have been made which make it possible to manage State, Anaconda Company, and Northern Pacific Railway Company forest lands jointly for grazing purposes. There is an increased interest and cooperation on the part of ranchers using the range as a result of these agreements. Ranchers and range owners are working together to secure better utilization of forage and at the same time reduce effects of grazing on range and tree seedlings. Ranchers using the area under agreement are planning drift fences so that early season use of range can be alternated year to year.

Problems

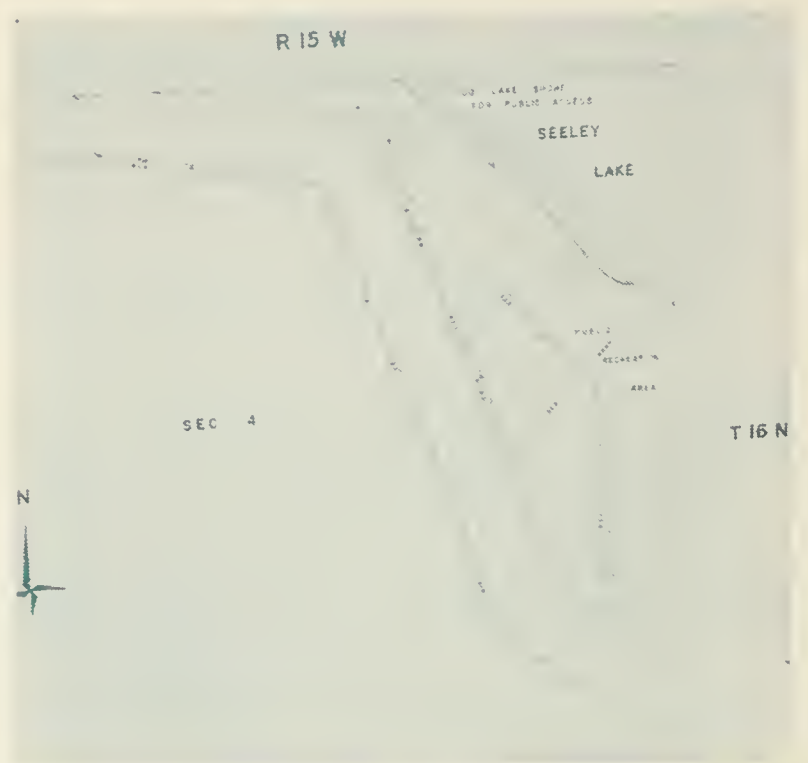
On many areas where State lands are intermingled with private lands, proper use and management is difficult. Trained personnel in range management are presently not available with this department to inspect range conditions, check grazing trespass or promote range improvement. As a result, the desirable and

highly palatable species of forage in some areas are overutilized and gradually killed out. Some improvement in range conditions is being made by reducing carrying capacity and by discussing common problems with ranchers involved.

The State Forester has 140 applications for special use leases. Some of these applications date back as long as two years despite the fact that 129 new leases have been made during the biennium. The department does not have sufficient trained personnel at this time to service all applications immediately.

Recommendations

1. It is recommended that the special use program on State forest lands be fully developed as rapidly as possible to increase the revenue for the school funds.
2. It is recommended that sections of State land which has been overgrazed be fenced and withheld from grazing until such time as the desirable species of forage will support a reasonable carrying capacity.



Seeley Lake development. Typical of special use long range planning.

3. It is recommended that a range forester be assigned full time to the grazing survey program and other special use development.

COOPERATIVE FOREST MANAGEMENT

Program

The office of the State Forester has been providing technical assistance to the private landowners of the State under the cost-sharing Cooperative Forest Management program for five years. There are four main objectives in providing this technical assistance. 1.) The first and probably the most important objective is to interest the landowner in forest management and convince him that management is a paying proposition. 2.) Provide a plan for the orderly development and harvest of the timber stand. 3.) Maintain or increase productivity. 4.) Restock non-producing forest land. A large percentage of the technical advice given private forest landowners in the State involve stands from which the merchantable timber has been removed. Timber now growing on these lands is generally the result of fire or accidental forestry.

The State Forester employs four service foresters to provide assistance to private landowners in managing their stands of timber.

Their work is primarily concerned with preventing premature cutting in private stands, providing for natural regeneration through approved cutting practices, and assisting the landowner in getting full market value for his timber.

Cutting practices and methods recommended by the service foresters for those stands in need of cutting, vary according to site, species, size and age of stand, degree of stocking and incidence of disease and insects. Other factors affecting the cutting practices include whether or not the owner is to do his own logging, the needs and objectives of the landowner, and the silvicultural needs of the stand. In general, the cutting methods recommended are those which are standard in the Rocky Mountain Region and which are being used by the large landowners and state and federal land managing agencies. These methods are:

1. Light and heavy selective cutting.
2. Clear cutting in blocks or strips with provision for natural regeneration.

3. Single seed tree selection.
4. Group seed tree selection.
5. Combinations of the above.

The practice of cutting to a diameter limit is recommended only when the landowner is determined to sell and will not take time to mark timber or lay out cutting boundaries and when such cutting will leave a thrifty well-stocked stand.

The service foresters make other recommendations which could not be classed as cutting practices or methods. They do, however, directly affect the acceptance of technical advice and whether or not the landowner continues his interest in forestry. These recommendations involve logging methods, ways and means of selling timber, and suggestions on timber sale contracts. Logging methods are recommended which will prevent soil erosion, provide for natural regeneration and which will cause the least damage to the residual stand. The landowner is encouraged to sell his timber by written contract for two reasons. One, to protect his rights in the land and timber; and second, to insure that the desired conservation measures are carried out by the logger. Generally the practice of selling timber on a lump sum basis is discouraged because of the difficulty in obtaining a satisfactory scale. This practice is also discouraged as many instances have been noted

where the owner has been fleeced by unscrupulous purchasers. The service forester also points out when it is advantageous to the owner to do his own logging and the advantage, tax-wise, of spreading timber cutting over a period of years.

Forest management practices and suggestions are generally presented to the owner on his own land after he and the service forester have made a joint inspection. The service forester will spend the necessary time to obtain growth data, volumes, stocking and other information about the stand. He will sit down with the farmer, find out his needs and objectives and then make recommendations. The landowner and the service forester together work out a program of forest improvement and management. This program is written up in the form of a working plan and presented to the landowner. Forest publications and informational guides are supplied to aid the landowner in following the plan. Landowners who are interested only in volume information or in selling timber, are referred to a consulting forester.

Accomplishments

Most landowners are accepting the suggestions and recommendations of the service foresters. We have evidence of this in that the acreage being managed is increasing and that the number of requests for assistance continue to increase.

To date 1,680 requests have been received for technical assistance involving 17,880 acres of private forest land. This number may seem impressive; however, it should be recognized that this represents only 10% of owners on 6% of the private forest land in the State which points up the need for an expanded and stepped up program if the private lands are to help provide forest products for the expected future needs.

The State legislature recognized this situation and provided funds for an additional service forester who was added to the State Forester's staff in Missoula July 1, 1959. In April, 1960, he was transferred to Thompson Falls in order to take care of requests received in Sanders and Mineral counties and to reduce travel costs from Missoula to that area. Service foresters have been carrying on studies such as



A Service Forester inspects an experimental planting of Scotch Pine showing excellent initial growth. Tree planting is a part of the programs designed to aid farmers and ranchers.

direct seeding, rodent control in plantations, and new methods of cruising by the use of a wedge prism.

Fiscal Year 1959

1. Number of Service Foresters.....	3
2. Woodland Owners Assisted.....	490
3. Acreage of Woodland Owners Assisted	44,503
4. Timber Inventoried for Management	312 M bd. ft.
5. Timber Marked for Cutting.....	805 M bd. ft.
6. Timber Stand Improvement (Thinning and Pruning)	1,649
7. Land Planted or Seeded.....	115 acres

Fiscal Year 1960

1. Number of Service Foresters.....	4
2. Woodland Owners Assisted.....	357
3. Acreage of Woodland Owners Assisted	44,125
4. Acreage of Land in Management Plans	18,466
5. Timber Marked for Cutting	993 M bd. ft.
6. Timber Stand Improvement (Thinning and Pruning).....	1,108 acres
7. Land Planted or Seeded	167 acres

Problems

Problems that the State Forester has in relation to the assistance furnished some private woodland owners is chiefly found in obtaining interest in woodlot management. There are some owners who will not follow suggestions and recommendations. Some of these cases can be explained away by saying that they are not employing any conservation methods on any of their land. These are probably people who do not wish to remain on the farm for any length of time and are not interested in what happens to it after they leave. It is difficult to convince a landowner that growing a crop of timber is desirable when he cannot realize an income from his efforts during his lifetime. Concrete evidence to prove to the owner that forest land management is profitable is needed. The Montana State University, the Montana Woodlot Council and the State Service Foresters are currently working on this problem.

During the biennium, 847 woodland owners were assisted in a total of 2,016 working days, allowing less than two and one half (2½) days per owner assisted. This is not time enough for a complete inspection of the owner's land nor to do an adequate job of preparing woodlot management plans

The vehicles being used by the Service Foresters were purchased in 1955 and 1956. Under the Cooperative Forest Management Program, the federal government reimbursed the State for half of the purchase price. These vehicles average 70,000 miles each at the present time and by the end of fiscal year 1961, will have approximately 90,000 miles.

Recommendation:

1. Vehicles assigned to the Cooperative Management Program should be replaced to reduce the present high maintenance and operation cost; two in fiscal year 1962 and two in fiscal year 1963.
2. Additional need for Service Foresters be correlated with fire control program needs so as to provide fire control employees during the fire season who work as farm foresters during the balance of the year.



Thinning and pruning will result in a finer stand of timber on this farm woodlot.

STATE FOREST INVENTORY

Program

The forest management division has continued the appraisal of State forest resources this biennium. When completed this appraisal will be the foundation for a long range management plan which will put all State forest lands on a sustained yield basis.

Accomplishment

The State inventory system has been adapted to utilize base maps, aerial photography and stand volume table information compiled by the U. S. Forest Service. This is a savings to the State in money and time.

Inventory of the Stillwater and Coal Creek State Forests has been completed this biennium with the exception of the IBM calculation phase. The preliminary report of the Stillwater State Forest indicates that there are 645 million board feet, all species, on a total of 91,489 acres. The report indicates a total of 102 million board feet on 14,594 acres of the Coal Creek State Forest. Complete analysis of this inventory information will be made after IBM calculations. The total inventory of the State forests as of June 30, 1960, is approximately 30% complete. In addition, progress has been made in various phases of the inventory on the 267,000

acres of classified State forest land which lies outside of State forests.

The inventory division has obtained aerial photography for 97% of the classified State forest land and modern base maps to cover 85%. These aerial photographs and maps are needed in other phases of State forestry work such as fire control, timber sales and grazing surveys.

Problems

Current photography for 3% of the classified State forest land is not available. It will be necessary to utilize old photographs with a consequent increase in the field work necessary to check accuracy or incur the expense of special flights to obtain accurate information.

Recommendations

The inventory of State lands which lie outside of State forests has been slowed down due to the expanding program of private forest land reclassification. Inventory of these scattered lands is being obtained in conjunction with the private land inventory at great savings to the State.

It is recommended that the legislature continue to support the State Forester in completing the program of inventory on State forest lands.



Modern scientific techniques used in Inventory include use of aerial photos and maps, cut down project man hours.

PRIVATE FOREST LAND RECLASSIFICATION

Program

In 1957 the State Legislature passed laws requiring all counties in the State to reclassify all private lands, including forest, for tax assessment purposes. In 1958 the Board of Equalization requested the office of the State Forester to prepare a manual defining the procedures and specifications for the Area Determination Phase of reclassification of private forest lands. This manual was to provide the counties of Montana with a uniform method of determining forest condition classes, accessibility and topography classes for the private forest lands. The information obtained is to be a basis for the county assessors to evaluate the private forest land for tax assessment purposes. This manual has been adopted by the Board of Equalization and is the rule and guide under which the private forest land reclassification is being made.

Each county in the State has the responsibility of reclassifying its own lands. The office of the State Forester has facilities available and will complete the forest land reclassification work of the counties at cost. Counties having a small amount of forest land find it economical to do this reclassification in conjunction with that of other lands.

The office of the State Forester has conducted a school for county reclassifiers on forest land inventory and use of the manual. The office is also providing technical assistance to the counties doing their own reclassification work which aids them to follow the procedures outlined in the manual. In counties where the volume of forest land is very small it is not economical to train people to do certain phases of the forest land reclassification field work. It is probably more economical if these phases are done by trained personnel from the State Forester's office.

Accomplishments

Eleven counties have requested the office of the State Forester to reclassify private forest land. They are: Missoula, Lewis and Clark, Gallatin, Lake, Madison, Powell, Deer Lodge, Sanders, Granite, Mineral and Lincoln counties. The progress of reclassification varies

CLASSIFICATION OF MONTANA COMMERCIAL FOREST LAND BY OWNERSHIP

Ownership	Acreage	Number of Owners
Federal	10,187,000	.....
State	608,000	.....
County and Municipal....	75,000	.....
<hr/>		
Total Non-Private	10,870,000	.....
Farm	2,360,000	4,930
Wood Using Industries....	1,086,000	4
Other Private	1,411,000	9,602
<hr/>		
Total Private	4,857,000	14,532
Total All Owners	15,727,000	.....

from 57 percent for those counties who requested assistance early, to approximately 10 percent on counties that only recently requested the State Forester to do the work.

Fifteen counties have requested technical assistance from the State Forester to assist their own reclassification organization.

Problems

Difficulty has come about because some counties have delayed requests to the State Forester to do the reclassification work or provide technical assistance.

Some areas have been found that are not covered by recent aerial photography. This may necessitate special flights to photograph these areas to obtain current reliable information. Each successive step of the program requires completion of the preceding step. Minor delays such as lack of photography, delays in obtaining maps, and short field season, may prevent work in several phases of the reclassification program.

Recommendations

Approximately 267,000 acres of classified State forest land are intermingled with private forest lands which are being inventoried. It is recommended that the State pay its proportionate share of the forest inventory which is much less than if these State lands were to be examined independently.

CONSOLIDATION OF STATE FOREST LANDS

Program

Following the recommendations of the State Forester in the 1957-1958 biennial report to the Governor urging the legislature to provide funds to initiate a program of consolidation of State forest lands, money was appropriated to employ a forester one-half time for this purpose. In 1959, the Anaconda Company made a request to the State Forester to exchange lands in the Blackfoot Valley east of Missoula, adjacent to the Clearwater State Forest. The lands offered lay within the Clearwater State Forest.

Accomplishments

The consolidation forester accompanied by a forester from the Anaconda Company, examined and cruised 4,840 acres of State land outside the Clearwater State Forest which had been requested by the Anaconda Company, and 5,100 acres of Anaconda Company's land inside the Clearwater State Forest which had been offered in exchange. It was found that most of the State land had not been logged, while all the Anaconda Company's land had been previously logged. Appraisal of the land and timber on both ownerships has been completed. The Anaconda Company must now make a formal request to the State Land Board before further negotiations can be undertaken.

Problems

It is recognized that various timber owning agencies have differing policies and methods of appraisals. These differences could cause negotiations in land exchange to take long periods of time.

The present field procedure used to secure the necessary field data for land exchange is quite detailed. Investigation is being made to determine if this process can be speeded up through the use of aerial photographs and prism cruising methods. The amount and accuracy of field data needed for land exchange purposes is fairly well established among the major timber landowners. A problem exists in finding a uniform method of appraisal and evaluation of this field data that is agreeable to all parties.

The exchange of State land for private land would, in some cases, involve the transfer of land from one county to another, and from one school district to another. This means that a county or school district could lose taxable private land. This loss would be offset with the acquisition of State land in the county or school district which provides revenue for the support of all schools in the State.

Recommendations

Consolidation programs are generally complex and time consuming; however, in view of the future benefits to the State of Montana in the cost of administering State forest lands, it is recommended that the program of consolidation be accomplished as soon as possible.

It is recommended that forest land owning agencies both public and private, develop a uniform system of land valuation and appraisal in order to expedite the land exchange program.

CHRISTMAS TREES CUT BY COUNTIES FISCAL YEAR 1959

County	No. Permits	No. Bales	Unit Average Price	Stump- age
Sanders	33	9,999	.55	\$ 5,777.09
Ravalli	10	627 2/24	.52	334.57
Missoula	34	10,091 5/24	.51	5,452.11
Powell	2	93	.48	52.64
Lincoln	31	12,970 14/24	.58	8,544.55
Flathead	74	17,426 6/24	.57	10,272.48
Lake	16	1,820 17/24	.58	1,206.50
Lewis & Clark	1	652 4/24	.48	313.11
	201	53,680		\$31,953.05
	154 tons boughs			148.88

CHRISTMAS TREES CUT BY COUNTIES FISCAL YEAR 1960

County	No. Permits	No. Bales	Unit Average Price	Stump- age
Sanders	38	8,407 8/24	.60	\$ 4,830.55
Ravalli	12	716 19/24	.60	539.95
Missoula	27	6,418 16/24	.53	3,575.01
Granite	1		.48	56.80
Powell	5	1,197 17/24	.57	657.35
Mineral	1	18 14/24	.48	8.91
Lincoln	30	7,074 1/24	.65	4,931.03
Flathead	75	14,439 6/24	.56	9,377.84
Lake	11	912 16/24	.65	707.60
	200	39,185 1/24		\$24,685.04
Boughs	16.138 tons @	\$5.00/ton		\$80.69

DISTRIBUTION OF INCOME FROM STATE FOREST LANDS

Fiscal Year	Montana State College	Montana State College Morrill	Deaf and Blind	Industrial School	E. Mont. Normal School	School of Mines	University	Common School	W. Mont. Normal School	Total
INCOME FUNDS										
1959	\$ 247.52	\$ 2,043.61	\$ 769.17	\$ 794.86	\$ 288.16	\$ 2,047.55	\$ 255.12	\$ 10,254.21	\$ 288.17	\$ 16,988.37
1960	314.79	3,169.32	1,191.21	1,200.97	336.18	2,442.70	248.90	10,454.43	336.17	19,694.67
PERMANENT FUNDS*										
1959	828.24	3,929.60	1,129.01	3,177.87	1,436.11	1,369.88	77.54	287,387.57	-----	299,335.82
1960	233.23	38,522.67	1,840.67	1,130.70	3,097.07	3,200.80	-----	261,195.61	-----	309,220.75
CAPITOL BUILDING FUNDS*										
1959	-----	-----	-----	-----	-----	-----	-----	-----	-----	72,639.58
1960	-----	-----	-----	-----	-----	-----	-----	-----	-----	68,770.30
						Total fiscal year 1959	1959		\$388,963.77	
						Total fiscal year 1960	1960		397,685.72	
						Total biennium			-----	\$786,649.49

INCOME FUNDS: 90% allocated to schools and other state institutions; 10% of these funds credited to PERMANENT FUNDS.

*PERMANENT FUNDS: Interest only on these funds expendable.

*CAPITOL BUILDING FUNDS: 100% expendable upon deposit.

SAWTIMBER CUT FROM STATE FOREST LANDS

FISCAL YEAR—1959

County	Ponderosa Pine	Douglas Fir	Larch	Spruce	White Pine	White Fir	Lodgepole Pine	White Bark Pine	Cedar	Total Green	Total Dead
Lake	288,010	3,512,880	4,680,630	749,360	276,870	266,150	74,850		174,600	10,023,350	566,720
Flathead*	24,390	1,332,395	3,866,375	4,841,760	653,080	572,170	370,550	113,620	16,200	11,812,540*	530,815
Ravalli	89,180	47,730								136,910	3,220
Lincoln	1,612,450	1,622,360	4,211,580	300,680		8,830	32,640	155,980	270	7,944,790	209,050
Mineral	15,170	5,130								20,300	
Missoula	324,040	2,219,160	128,540	74,010		43,260	34,810			2,823,820	99,240
Beaverhead		338,807					1,000			339,807	
Sanders	45,710	103,700	160,010	2,230	3,720	6,090	2,430			323,890	7,550
Powell	65,370	554,880	26,790	16,290		1,090	8,920			673,340	23,870
Park		720		710			64,980			66,410	
Granite		101,700								101,700	
Lewis and Clark	15,060	2,940								18,000	
Gallatin		50,000		50,000						100,000	
Stillwater	17,192									17,192	
Jefferson	900	8,030								8,930	
Broadwater		33,216								33,216	
Totals	2,497,472	9,933,648	13,073,925	6,035,040	933,670	897,590	590,180	269,600	191,070	34,444,195	1,440,465

SAWTIMBER CUT FROM STATE FOREST LANDS

FISCAL YEAR 1960

County	Ponderosa Pine	Douglas Fir	Larch	Spruce	White Pine	White Fir	Lodgepole Pine	White Bark Pine	Cedar	Total Green	Total Dead
Lake	147,760	1,574,660	4,385,900	705,560	605,740	242,680	39,140		469,550	8,170,990	291,560
Flathead		500,070	3,037,420	1,811,280	184,180	367,370	209,154	46,280	29,040	6,184,794	208,920
Ravalli	8,200	31,890		590		10	200			40,890	
Lincoln	786,050	551,310	1,115,050	2,960		10,580	16,790		160	2,482,900	120,400
Mineral	79,900	1,180								81,080	
Missoula	117,310	505,320	1,194,180	76,970		5,260	35,100			1,934,140	10,530
Sanders	3,240	155,930	41,910	210		830	3,120			205,240	6,150
Powell	505,800	1,742,070		2,680			79,510			2,330,060	23,840
Park		1,690					14,440			16,130	
Lewis and Clark	6,410	119,095					28,000			153,505	
Gallatin		568,470					3,670			572,140	
Totals	1,654,670	5,751,685	9,774,460	2,600,250	789,920	626,730	429,124	46,280	498,750	22,171,869	661,400

*Includes 2 M Birch and 20 M Cottonwood.

FOREST PROTECTION



Fire is a deadly enemy of the forests. Increased use of the forests for watersheds, recreation, and timber has brought increased demands on the State Forester for State-wide protection of valuable forest lands.

CIVIL DEFENSE FIRE PLANNING

Program

Following the passage of Montana's Civil Defense Act of 1951, the State Forester became the Chairman of Montana's Civil Defense Fire Protection program. In 1956 the jurisdiction of the committee was expanded to include rural lands in addition to woodlands. The committee, comprised of representatives from all state and federal agencies having fire responsibilities on rural and wild lands, became the Montana Rural Fire Defense Committee. The Federal agencies—the U. S. Forest Service, the Bureau of Land Management and the National Park Service are delegated authority to assist in civil defense planning by the Office of Civil and Defense Mobilization.

Accomplishments

The Montana Rural Fire Defense Committee has completed the inventory stage of rural fire defense planning and has issued the Montana Rural Fire Defense Plan. This plan has been kept current through annual revision.

Each year the Office of the State Forester participates on a state-wide basis in the National Operation Alert (OPAL) to determine how the rural and wildland fire protection agencies might respond in case of actual emergency, and how necessary improvements might be made. Since 1958 the State Forester has been Chief of the Defense Fire Service.

Problems

Plans for Urban Fire Defense under the Montana Survival Project are yet to be completed. Planning of this kind and the revision of plans requires considerable time and assistance.

Recommendations

For the development of satisfactory Civil Defense Rural Fire Plan and maintaining both the Civil Defense Rural Fire Plan to acceptable standards, operating expenses should be provided for the next biennium.

FIRE PREVENTION PROGRAM

Program

Public support is a major factor in the effectiveness of the program of the Office of the State Forester. With this in mind two Fire Prevention Foresters have been assigned the responsibility of increasing the public's awareness of the job being done for them, not only in the prevention of fires, but in management of their valuable timber resources represented by State Forests and to answer numerous requests for information. While the task has been assigned specifically to Fire Prevention, it is recognized that every employee of the Office of the State Forester is an important link with the public and special training has been done to bring this concept to fruition.

Accomplishments

One of the major projects of the Fire Prevention program is the administration of the Cooperative Forest Fire Prevention Campaign known as the Smokey Bear Program. This campaign is supervised by the Association of State Foresters and the U. S. Forest Service

through an executive committee of three State Foresters, three representatives of the U. S. Forest Service and a member of the National Advertising Council. The U. S. Forest Service provides a director who coordinates the program on a national level. The Advertising Agency of Foote, Cone and Belding contributes art and ideas for slogans to the program free of charge as a public service. The campaign is financed by federal and state agencies, the royalties from the sale of Smokey Bear items and contributions of time and space by newspapers, magazines, radio and television. The Office of the State Forester is the Montana headquarters of Smokey Bear. Thousands of requests for membership in Smokey's Junior Rangers are received each year, and Smokey appears at schools, meetings, parades, and fairs.

Keep Montana Green Fire Prevention Program is another program in which the Office of the State Forester participates. This program is sponsored by Montana forest industries, the Junior Chamber of Commerce, and other private and public agencies. At the present time

it is still in the growing stage. Keep Montana Green literature is distributed throughout the state. Youth programs, particularly the Boy Scouts and the 4-H, are recipients of many man



Much of Fire Prevention is carried on in conjunction with the Smokey Bear and Keep Montana Green programs.

hours in instruction in prevention, protection and conservation. County fairs have provided an effective means for the State Forester to inform the public of his programs, and the State Forestry booth is usually a real attraction.

The personnel of the department are often called upon to contribute to publications regarding forestry activities, and are much in demand for programs in schools and meetings. The Arbor Day program with the schools continues to be an important contribution. Training within the department is also part of the program, and includes First Aid, Fire School, Safety and on the job training in the various facets of forestry management.

Problems

The Fire Prevention program has enjoyed a steady growth. Operations are limited by available funds and equipment, while requests for information and assistance have more than doubled in this biennium.

Recommendations

Maintain efforts to meet requests for information on the services and program of the State Forestry Department.

Intensify the campaign to reduce man-caused forest fires in the State, through renewed efforts and reorganization of the Keep Montana Green program.

FIRE PROTECTION ON STATE FOREST LANDS

Program

The State Forester is responsible for protecting state forest lands from fire. Fire protection of state owned forest lands is financed by legislative appropriation supplemented by federal assistance under the Clarke-McNary Act.

The peculiar distribution of state forest lands complicates fire control measures. State forest lands existing in blocked ownership are protected by employees and equipment of the State Foresters Office. The protection of small and scattered holdings is often assigned through a contractual arrangement to other protection agencies able to provide more economical protection.

Accomplishments

In order to bring the protection of state land to a higher degree of efficiency, a fire plan for the northwestern Montana district at Kalispell was prepared. This fire plan provides a uniform and efficient use of available manpower and equipment on the three (3) protection units under direct state protection.

The fire plan calls for the following changes in the fire protection units:

1. A central equipment and dispatch center at the Kalispell office including a warehouse and mechanic shop. Presently the mechanic shop is located at the Stillwater Station and is approximately 30 miles

from a major part's department so the acquisition of automobile parts is exceedingly costly.

2. The renovation of Werner Peak in the Stillwater State Forest, Napa Peak and Woodward Peak in the Swan River State Forest.

Dog Mountain Lookout in the Stillwater State Forest has been abandoned. In its place a new lookout has been located on Stryker Ridge which provides more effective coverage. At the present time a road has been constructed to this new lookout and a lookout bus provides quarters for the lookout. A steel tower will be constructed for a permanent lookout tower.

Woodward Peak (Whitetail) Lookout in the Swan River State Forest must be replaced by 1961. The timber is full of dry rot and the existing lookout must be condemned. Concrete footings and 16 feet of a 60 foot steel tower have already been constructed on this lookout site.

Both the steel towers for the Stryker Ridge lookout and the Woodward Peak Lookout were received as surplus property from the Forest Service.

Napa Peak in the Swan River State Forest must be completely rebuilt. In order to accomplish this and provide effective facilities on the lookout, a road should be constructed from the loop road to the lookout. Approximately two (2) miles of this road can be constructed through timber management but the remaining mile must be constructed with fire protection funds.

3. In order to increase the efficiency of the protection unit in the Swan River State Forest, the 1958 Legislature authorized the construction of a residence in the Swan River State Forest for the state forest supervisor.

This will provide a state forest supervisor in the State Forest on a 24 hour-7 day week basis. There is a need for the existing residence in the Stillwater State Forest to be repaired and an additional residence placed on this forest. This would give maxi-



A vital link in fire control is communications. Here linemen string telephone lines to Woodward Lookout.

mum efficiency in the fire organization on the Stillwater State Forest during the fire season and provide needed coverage for timber management activities during the remainder of the year.

At the present time fire personnel must live in Whitefish, about 20 miles south of Stillwater Station, because of the housing situation at the Stillwater State Forest.

Problems

Efficient communication systems are vital to an effective fast hitting fire suppression organization. At the present time, our mobile and stationary radio communications equipment are inadequate to provide this need.

Because of Federal Communication System rulings, our present radio communication system is obsolete and must be replaced by fiscal year 1963 in order to meet these Federal Communication Commission requirements. A five year comprehensive radio communication plan has been prepared to eliminate this situation. This radio plan calls for the following work to be accomplished in 1961 and 1962.

1. Reduce the frequency deviation on the two base radio stations at Missoula and Kalispell—also seven (7) mobile radios and three (3) portable radios.

2. Purchase three (3) base radios, one for each protection unit. Purchase five (5) mobile radio units and three (3) portable units. These additional radios purchased will replace equipment now regarded obsolete by the Federal Communications System. These purchases have been worked out on a ten (10) year program with the fire protection communications system being treated during the next four (4) years.

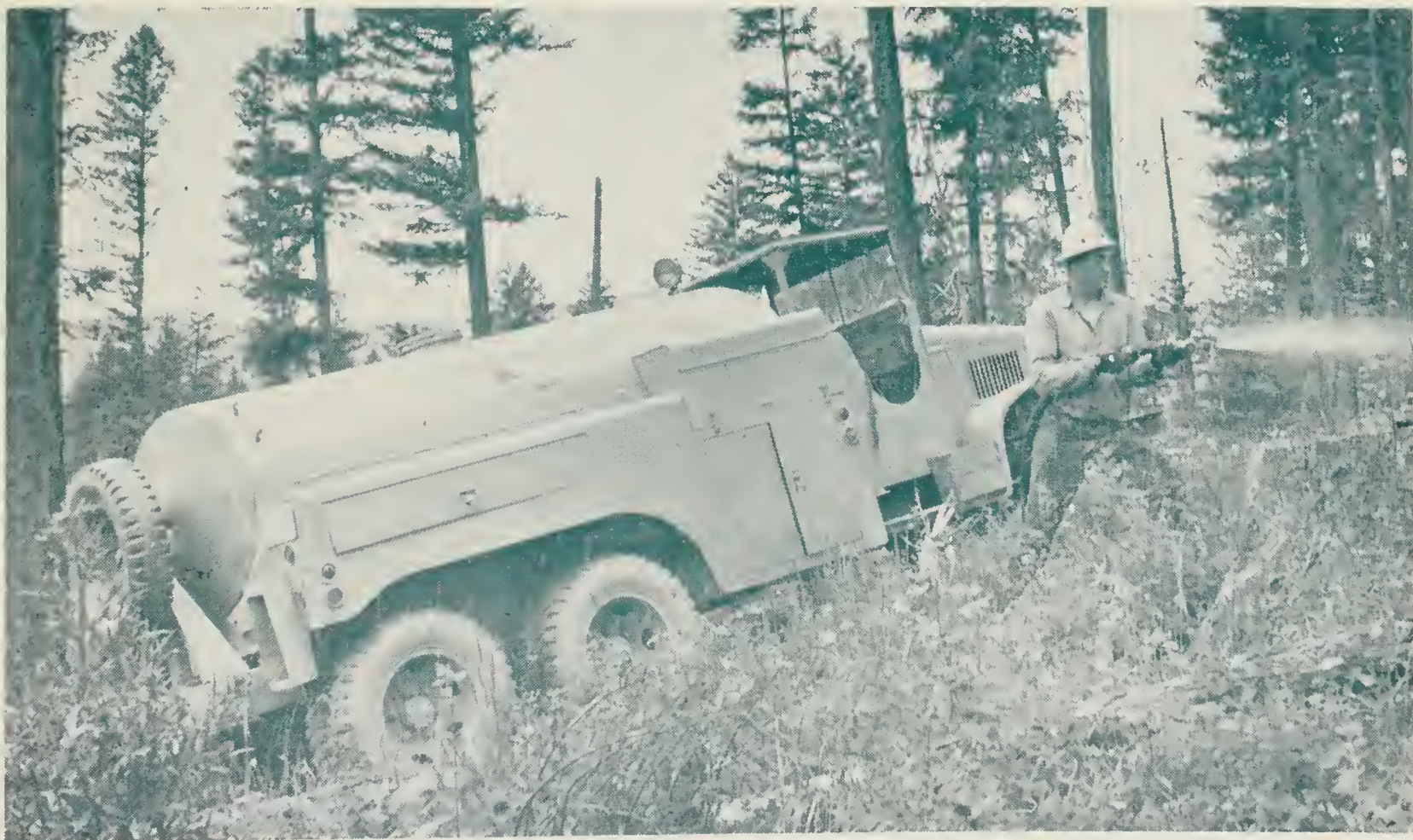
The State Forester through government surplus programs has acquired approximately \$476,000 (federal acquisition cost) in equipment and vehicles for fire suppression purposes. Surplus equipment has provided very good interim measures in supplementing our fire suppression organization. Use and conversion of surplus equipment presents some major problems in repair, frequency of breakdown, and difficulty of obtaining parts through a civilian market.

Although this surplus equipment has provided effective **interim** fire protection equipment, the equipment must be replaced in the

next few years with standardized fire fighting equipment.

Recommendations

1. Provide for the acquisition of modern standardized forest fire suppression vehicles and equipment to replace surplus equipment.
2. Construct warehouse shop at Kalispell.
3. Provide for improvement of the residence at the Stillwater State Forest headquarters, and an additional residence at the Stillwater State Forest headquarters for the Stillwater forest supervisor.
4. Provide for necessary fire personnel as called for by the fire plan.
5. Provide for radio equipment necessary to carry out the departmental radio plan which will conform to the Federal Communication's regulations.
6. Promote economy and efficiency of fire protection by consolidating scattered state owned forest land.



Conversion of excess military property to fill protection needs has provided economical stop-gap equipment like this 6 x 6 pumper.

FIRE PROTECTION ON PRIVATELY OWNED FOREST LAND

Program

One of the responsibilities of the State Board of Forestry is to provide fire protection to the privately owned forest lands in Montana. This protection is provided at a reasonable cost directly by the Office of State Forester, and cooperatively through the recognized forest fire protection agencies to nearly six million acres of state and privately owned forest lands. However, there still remain large areas of private forest lands east of the Continental Divide which are not receiving adequate fire protection. Legislation passed in 1959 is allowing the Forestry Board and State Forester to bring more of this forest land under protection. The recognized agencies are the fire protection associations—The Blackfoot Forest Protective Association, the Northern Montana Forestry Association, the Anaconda Fire Protection Service—the U. S. Indian Service, and the U. S. Forest Service. The protection of private lands is financed by assessment on classified forest lands, supplemented by Clarke-McNary funds and state appropriations apportioned by the State Forester.

Accomplishments

Under the Montana laws in effect until June 30, 1959 only areas producing, or capable of producing, merchantable timber could be classified for forest fire protection assessment. At the same time considerable acreage within the boundaries of organized fire protection districts received, but did not pay for, their share of fire protection. It will take some time for the State Forester to adjust to the provisions of the 1959 amendments, but these adjustments which will result in better fire protection to both state and privately owned forest lands, are being accomplished.

The definition of forest land for fire protection purposes is now based on **flammability of cover**, rather than on merchantability. Zones having similar protection costs may now be established, based on similar protection costs rather than on topographical features. Forest lands may now be classified in to two classes—Class I, primarily timber; Class II, primarily grazing—and separate assessment rates may be

applied to each class. Maximum cost to owner as provided by law is 10c per acre for Class I lands, and 3c per acre for Class II lands. The 1959 law also provides for State participation in financing a portion of the protection costs. In the event the Legislature fails to appropriate money for private land protection, the law permits the owner to pay the full cost.

Outlined here are the steps to be taken in establishing new forest protection districts under the 1959 law:

- A. Establish boundary of forest protection districts. (Legal descriptions of these new districts east of the Continental Divide have been prepared and approved by the Forestry Board.)
- B. Creation of the Districts. (The State Forester agreed that the Board will hold public hearings before establishing each fire protection District.)
- C. Classify land within boundaries of each district. (By ownership — Class I and Class II lands.)
- D. Prepare a fire plan for each district.
- E. Submit the plans for Forestry Board approval.
- F. The State Forester will then request the Legislature to appropriate the State's share of the money called for in the plan.
- G. After the appropriation is made (or not made), the Board causes the assessments to be made.

Recommendations

1. It is recommended that an appropriation of \$10,000 per year be made with which to employ (salary and per diem) an individual to spend full time in the classification work in conjunction with establishing the new fire districts.
2. The State of Montana should assist in the adequate financing of a forest fire presuppression organization for both state and privately owned forest lands.
3. The State of Montana should make provisions for quickly and adequately financing the suppression of "major disaster" type fires, or fires likely to become such.

STATE LANDS FIRE PROTECTION ORGANIZATION

HAS

NEEDS

1	OFFICE BUILDINGS	1
5	 LOOKOUTS	3
42	CARS, TRUCKS 	5
26	 MOBILE RADIOS	7
8	PORTABLE RADIOS 	3
8	 PUMPERS	6
2	DOZERS 	3
1	 TRANSPORTS	2
2	RESIDENCES 	2
2	SHOP-WAREHOUSES	1

**AREA PROTECTED, NUMBER OF FIRES, AND AREA BURNED—COMMERCIAL FOREST LANDS
OF MONTANA BY PROTECTION GROUPS**

Ten Year Period, 1950-1959

Year	Protection Group	Area Protected M Acres	No. of Fires	No. of Fires Per Million Acres	Area Burned Acres	Area Burned Per Million Acres	Percent Protected Area Burned
1950	State CM2	6,000	224	37	894	149	0.01
	Federal	19,033	201	11	256	14	0.00
	Total	25,033	425	17	1,150	46	0.00
1951	State CM2	6,000	238	39	549	92	0.01
	Federal	19,103	284	15	1,284	67	0.01
	Total	25,103	522	21	1,833	73	0.01
1952	State CM2	6,000	289	48	1,665	278	0.03
	Federal	19,129	392	21	3,342	175	0.02
	Total	25,129	681	27	5,007	199	0.02
1953	State CM2	6,000	347	58	796	133	0.01
	Federal	19,155	862	45	7,144	373	0.04
	Total	25,155	1,209	48	7,940	316	0.03
1954	State CM2	6,000	265	44	403	67	0.007
	Federal	21,098	385	18	1,227	58	0.006
	Total	27,098	650	24	1,630	60	0.006
1955	State CM2	6,000	240	40	346	57	.006
	Federal	21,189	346	16	5,746	274	.02
	Total	27,189	586	22	6,092	226	.02
1956	State CM2	6,000	268	45	1,103	184	.03
	Federal	21,214	619	29	6,523	308	.02
	Total	27,214	887	33	7,626	280	.03
1957	State CM2	6,915	321	46	1,381	200	.02
	Federal	21,040	524	25	2,726	130	.01
	Total	27,955	845	30	4,107	145	.01
1958	State CM2	6,915	253	38	1,358	196	.02
	Federal	20,994	673	32	6,485	308	.03
	Total	27,909	925	33	7,843	281	.03
1959	State CM2	6,915	261	38	11,167	1,614	.16
	Federal	19,107	375	16	3,796	198	.02
	Total	26,002	566	22	14,963	575	.06

*State CM2 includes state and private forest fire protection agencies.

HAZARD REDUCTION (State Owned Lands)

Program

Montana statutes require the reduction of additional fire hazards created during logging on state owned lands. The reduction of these fire hazards through the treatment of logging debris is designated as "brush disposal" on state owned lands—"slash disposal" on privately owned lands. This differentiation facilitates explanation, discussion and accounting. The methods and principles involved are similar.

Policies governing the hazard reduction program on state lands are formulated by the State Board of Land Commissioners on recommendations of the State Forester. The present policy requires purchasers of State owned timber to pay up to \$1.50 per each thousand board feet of timber harvested for brush disposal purposes.

Accomplishments

Approximately \$45,000.00 is deposited annually for hazard reduction work on state forest lands. This work varies to the number and size of timber sales sold by the department. Because of the basic measure of hazard reduction

has been made. Hazard Reduction on these areas has been tied directly into the management plan and when the timber is sold, a hazard reduction plan is incorporated in the timber sale. This hazard reduction work is closely correlated with timber stand improvement work when possible, to conform with the overall policy of the department under the forest management plan. This close correlation with the division of management provides a more efficient and uniform procedure for hazard reduction on state lands than we have ever had before.

Problems

Because the amount of hazard reduction work is based on the type and amount of timber cut, a flexible hazard reduction fee is necessary to provide the proper amount of disposal money for each particular area cut. Areas of light selection and small permit type sales do not require the same amount of hazard reduction work as the more heavy clear cut type cutting. This fee should be based on the volume cut with a range from 75c per thousand board feet to not more than \$2.00 per thousand board feet with graduations between the mini-

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL OF BRUSH ON STATE TIMBER SALE AREAS

	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
F. Y. 1959.....	\$24,560.16	\$52,298.01	\$76,958.17	\$49,126.72	\$27,795.45
F. Y. 1960.....	27,795.45	46,466.53	74,261.98	42,003.23	32,258.75

work on state lands, it can be divided into basic categories depending upon the degree of management on state forest land. The first category is scattered state land ownership. Hazard reduction in these areas is primarily for fire reduction purposes and is not tied in too closely with the management program. However, no work is done that would be damaging to the land and interfere with a management program.

The second category is hazard reduction work done on the consolidated holdings within the state forest on which a management plan

minimum and maximum based on the knowledge of the slash accumulations and topography.

A flexible hazard reduction fee on state lands, would allow the State Forester to fix the purchase assessment according to the conditions of each individual sales.

Recommendations

Establish a flexible hazard reduction fee for work done on state forest land—this flexible disposal fee should range from 75c per thousand board feet cut to \$2.00 per thousand board feet at the present.

HAZARD REDUCTION (Privately Owned Lands)

Program

The main purpose of slash disposal is to break up large accumulations of logging debris by piling, burning, scattering or isolation through construction of fire breaks. Methods of slash disposal vary according to terrain, slash volume, and, of course, monies available.

Although there have been considerable differences in opinion concerning the value of slash disposal on forest lands, both fire history and fire research indicate in Montana that the most serious and costly fires have occurred on areas where no slash disposal or inadequate slash disposal existed. As the importance of Montana's forests, both state and private, increases, the slash disposal program must be kept current with the increase in the forest values.

The 1959 legislative assembly passed a new Hazard Reduction or Management Law as recommended by both the State Forester and the State Board of Forestry. This Law raises the amount collected for slash disposal fees from 75c per thousand board feet of timber harvested to \$1.00 per thousand board feet of timber har-

Accomplishments

In implementing the new Hazard Reduction or Management Law, the personnel of the Office of State Forester held a series of meetings throughout the state so that all landowners, operators and sawmill operators would become familiar with the law and understand its purposes and intent.

Meetings were also held with the protection agencies who will act as agents for the State Forester in providing better service to the forest industry concerning the Hazard Reduction or Management Law. In order to provide better service, other forestry agencies were contacted and agreed to carry out certain field procedures under the new Hazard Reduction or Management Law. A manual was made up for this purpose and distributed to these other forestry agencies. With this increase in service, operators may receive help in complying with the Hazard Reduction or Management Law any place in the forest areas of the state with little or no inconvenience.

Acceptance by the public of this new Law has been very gratifying. Approximately 1,135 hazard reduction agreements have been made

COLLECTIONS AND DISBURSALS OF FUNDS FOR THE DISPOSAL OF SLASH ON PRIVATE LANDS

	Balance Forward	Receipts	Total Available	Expenditures	Balance Forward
F. Y. 1959	\$166,464.16	\$159,115.54	\$325,579.70	\$161,905.56	\$163,674.14
F. Y. 1960	163,374.14	284,853.71	448,527.85	148,410.71	300,117.14

vested. The responsibility of abating the slash hazard has been transferred from the landowner to the operator. The operator now enters into a hazard reduction agreement with the State Forester for the abatement of the slash hazard. The State Forester is the general administrator of the New Hazard Reduction or Management Law under the supervision of the State Board of Forestry and employs District Hazard Reduction Foresters and hazard reduction crews for this purpose.

in the past six (6) months since the law has been in effect.

Problems

The State Board of Forestry feels that the inspection of hazard reduction activities is a police power and should be recognized as such by the State. Since the money received for slash disposal fees are specifically designated for hazard reduction work on the ground, no fees should be taken from slash disposal monies for inspection purposes.

With the passage of the new Hazard Reduction or Management Law, most of the serious

problems in the slash disposal on private land were solved. It is still too early to determine the entire effectiveness of the new slash program but general observation indicates much more efficient and effective slash disposal on private lands in Montana. This new slash law

will be a great benefit in the protection of Montana's forest land.

Recommendations

Provide for the employment of three (3) hazard reduction slash inspectors from appropriated fire protection funds.

MONTANA RURAL FIRE FIGHTERS SERVICE

Program

The State fire control law of 1945 authorized the establishment of rural fire protection districts throughout the State. The four main provisions of the law are:

- 1. Appointment of county and district fire chiefs.
- 2. Appropriation by county commissioners of not more than \$5,000 annually for the purchase and maintenance of fire control equipment.
- 3. Authority to establish closed burning seasons and issue burning permits at the discretion of the fire chief.
- 4. Organization of fire control districts through special taxes levied by petition signed by 50% of the taxpayers owning at least 50% of the taxable lands in the district.

tivities of the State Coordinator are financed by an appropriation for this purpose in the budget of the State Forester.

Accomplishments

Efforts to promote effective rural fire protection have been extended to cover all 56 counties through the visits of the State Coordinator, news articles, meetings and bulletins. One hundred rural fire districts and associations are now in operation, with 212 pieces of rural fire fighting apparatus in use. Forty one communities have done something toward organization and are being helped by the Coordinator. He attends and participates in the following state wide meetings: 4-H Congress Fire Control School; Montana Rural Fire Fighters Service Annual Meeting; Montana Fire Chiefs Association Annual Meeting; State Farm Safety Committee; State Rural Civil Defense Committee meetings.

MONTANA RURAL FIRE FIGHTERS BUDGET

Fiscal Year	State Funds	Coordinators Salary	Clerical Salaries	Travel and Operation	Other Expenses
1959	\$7,513.00	\$4,800.00	\$ 50.00	\$2,000.00	\$ 663.00
1960	7,900.00	5,280.00	.....	2,200.00	420.00

Fire protection may also be financed through dues paying associations or bond selling corporations.

With the enactment of this law, the Forest and Range Fire Fighters Service, organized into the Montana Rural Fire Fighters Service, representing government and private agencies concerned with rural fire problems. Planning, organization and coordination of rural fire protection is executed by a full time state coordinator elected by an executive committee of the Montana Rural Fire Fighters Service. The ac-

An outline explaining the steps in organizing rural fire control districts and one for volunteer fire companies were prepared and have been distributed to about 325 people interested in the formation of legal fire districts or volunteer fire companys.

Problems

The record of man caused fires in rural Montana indicates the necessity for a vigorous program of rural fire protection and education. While one hundred fire districts and associa-

tions are equipped with fire fighting apparatus and a total of 212 pieces are in use, at least an additional 110 organizations are needed.

Recommendations

1. The fact that over a million dollars in loss is suffered annually from rural fires

in Montana indicates that the educational program of rural fire protection is one that needs intensification.

2. An increase in Civil Defense organization is imperative in view of the growing industrialization in Montana in rural areas.

FOREST PEST CONTROL

Program

During recent years damage of major proportions to Montana's forest has been caused by three forest pests—dwarf mistletoe, spruce bark beetle, and spruce budworm.

Mistletoe damage is severe in many areas—notably in the vicinity of Flathead Lake. Despite research by several interested agencies in Montana, no satisfactory control has yet been developed.

The spruce bark beetle epidemic has been responsible for killing over a billion board feet of timber in Montana. The only economical method of control is to harvest the timber while the larvae of the beetle are under the bark. The cooperative efforts of industry, state and federal agencies in a gigantic program to harvest infested spruce timber decreased the severity of the spruce bark beetle infestation.

The spruce budworm continues to be epidemic. To date approximately five million acres of timber have been affected by the budworm, of which it is estimated 40% is in private ownership. The federal government finances all the cost of spraying federally owned lands and pays half the costs of spraying state and privately owned lands. Spraying costs vary from ninety cents to one dollar ten cents per acre. The state legislature in each of the past four sessions has appropriated funds necessary for spraying the state owned forest lands. Private owners pay on a voluntary basis.

Accomplishments

The U. S. Forest Service performs the actual spraying operations. The State Forester is responsible for securing agreements for payment

from the owners of private land. It is necessary that all infected areas within a spray unit be sprayed to prevent reinfestation.

Problems

Montana's primary problem in connection with the control of forest pests is the adequate and equitable financing of control projects on private forest lands, much of which are intermingled with state and federal ownership. Under present statutes individual landowners within proposed control units voluntarily pay their share. Some owners willingly cooperate, while others refuse for a variety of reasons, among which are financial inability and low commercial value of his timber stand.

Recommendations

It is proposed that the Legislature make it possible to control outbreaks of forest pests by passing legislation that will:

1. Declare forest pests to be public nuisances.
2. Define, for forest pest control purposes: owner, control, infestation, forest pests, forest land, timber.
3. Place responsibility for control of forest pests on owners of forest land. If owner fails, make it possible for State to take action.
4. Provide a means for collecting owner's portion of control costs.
5. Provide for State participation in payment of control costs on private lands.



In the scorching fire season just passed, and covered only partially by this report, men, trained and with the right equipment, have answered the challenge.

